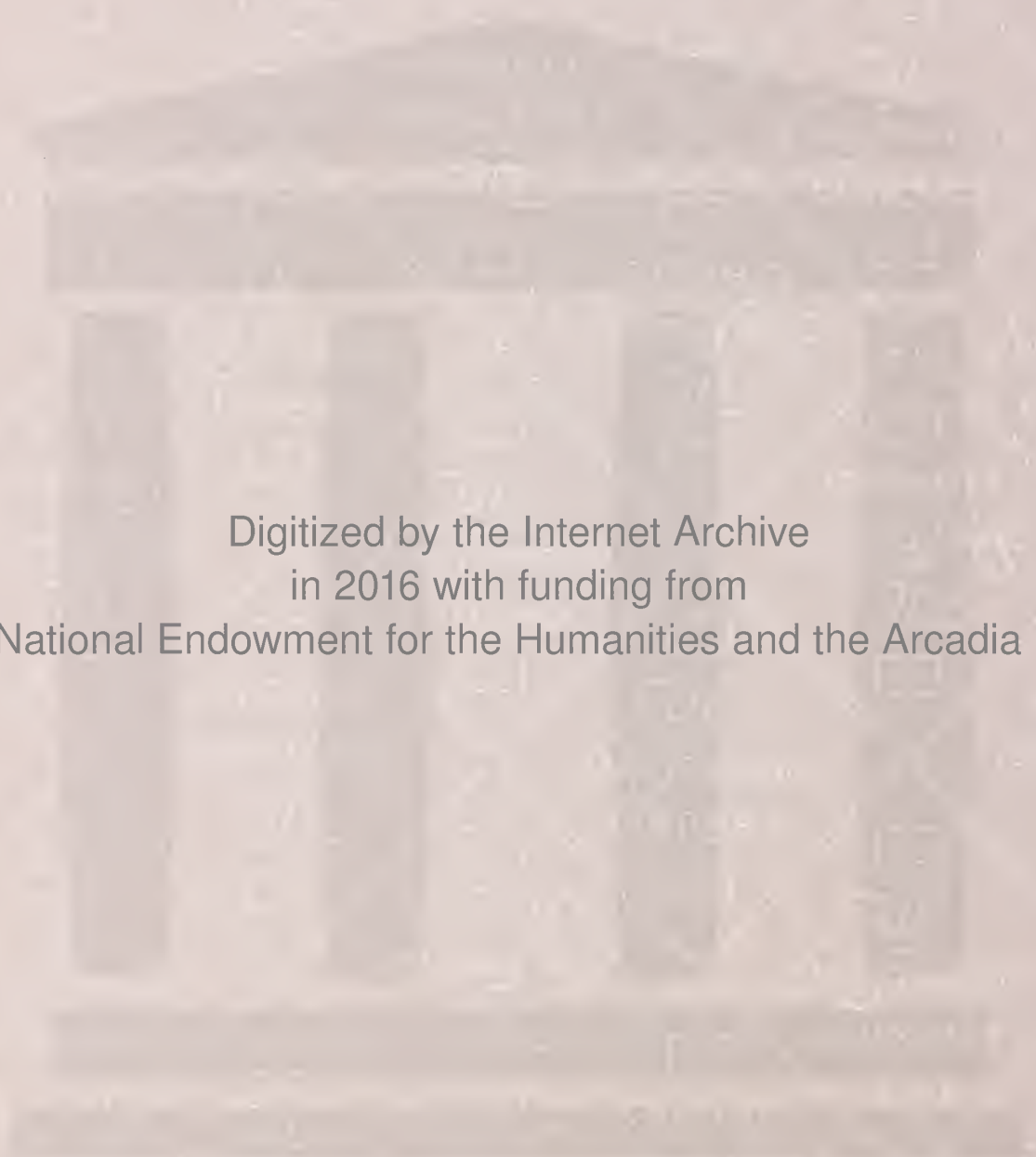




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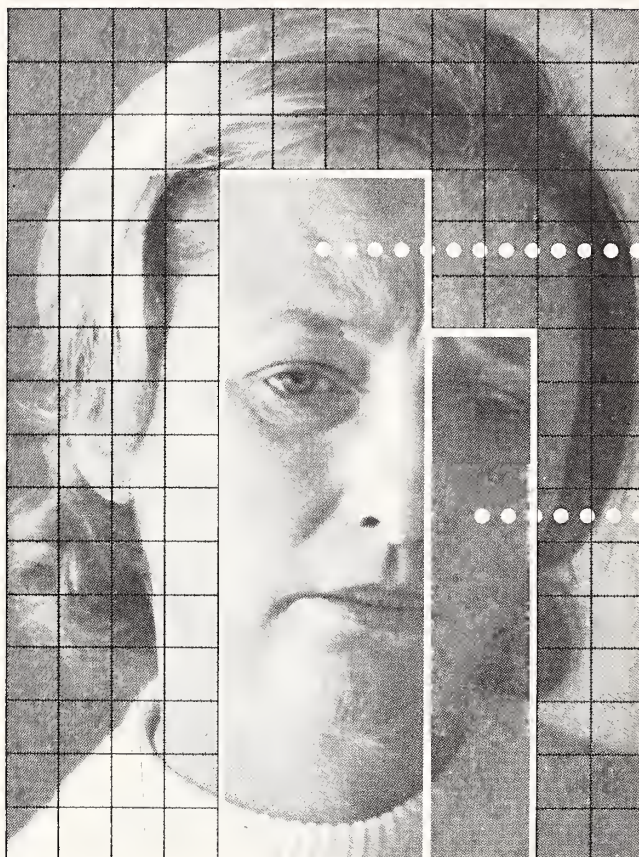
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Adult Respiratory Distress Syndrome

Watts R. Webb, M.D.

Although adult respiratory distress syndrome (ARD) has only recently attracted the attention of the medical profession in general, the condition has been discussed for many years. Carl Moyer at Southwestern was describing congestive atelectasis, as were Jenkins and others working with him, long before it came to command its present degree of interest. It became apparent during the Viet Nam conflict and, later, in studies made at the University of South Carolina, Massachusetts General and Peter Bent Brigham, that a large number of patients who were dying in intensive care were dying from respiratory complications . . . even though they had received excellent surgical and medical care.

The usual signs of pulmonary insufficiency are tachypnea, hyperpnea, retraction, and grunting. First you will have refractory cyanosis that does not respond to increasing concentrations of oxygen and then alveolar infiltrates on the X-ray that may become completely opacified. The etiologic factors are: the many toxic substances released anytime there is tissue injury; vaso-active substances, particularly serotonin, histamine, and various plasmins; fat from either soft tissue or long bone injury; oxygen may play a role; and sepsis. Acidosis is also a factor, as are overtransfusion and overinfusion of crystalloids and colloids.

In Viet Nam, it became obvious that what had been demonstrated by Dr. Shires and his group, and Ben Wilson before him, was quite true: whenever people lose just blood, they need not only blood replacement but also some replacement of electrolyte solution because of translocation of fluid into the injured tissues. Likewise, there is movement from the extracellular fluid into the collagen and into the cells, so it is necessary to replace not only what is lost but also a good deal of additional electrolyte solution as well. Certainly hyperperfusion and underperfusion of the lungs may play an important role insofar as the surfactant is concerned, in not allowing it to be properly elaborated and thereby causing real problems.

The typical pathologic changes seen in this syndrome are open interalveolar pores, marked thickening of the interstitial areas, initially with edema and then with white and red cells, and then the escape of plasma and red cells into the alveoli. Finally, one sees

the development of hyaline membranes as there is organization, coagulation and leakage of plasma proteins in the alveoli.

In looking at this whole problem some years ago, we developed a model of hemorrhagic hypotension. A dog was bled to forty millimeters of mercury into a plastic bag. Two hours later the blood was re-infused into the animal which developed congestive atelectasis. This was not just a hemorrhage model because hemorrhagic shock alone will not produce congestive atelectasis. The animals are done under clean but not sterile circumstances, so there are at least mild degrees of sepsis. Similarly, these animals have a good deal of surgery, not only cut-down on femoral vessels but also in the chest and various other areas, so there is considerable tissue trauma. You cannot bring on this condition in a well-conditioned, healthy animal with a hematocrit of 45 or so. You must have an anemic animal or a hypo-proteinemic animal, so in order to produce this model you need more than just hemorrhaging.

We looked at many things to see what would prevail. We put catheters in many places in the lung. First, in the pulmonary artery, then the pulmonary arterial wedge in the typical fashion, and one in the pulmonary vein wedge, obviously an open chest preparation. The pulmonary vein wedge will essentially reflect the mean pulmonary artery pressure. Also we put a catheter in the small pulmonary veins which are those veins measuring a millimeter or so in diameter. They are richly interveined and filled with smooth muscle so that they can react if stimulated. Then we put another catheter in the large pulmonary vein or left atrium. The pulmonary arterial wedge should reflect the small pulmonary veins, large pulmonary veins and the left atrium in the normal circumstance. And, in the normal animal, they are within a millimeter or so of each other. With hemorrhage they all fall a bit, but then very quickly a gradient develops between the small pulmonary vein and the left atrium. We interpret this as spasm of the small pulmonary vein structure. The pulmonary artery wedge stays the same as the small pulmonary vein. But with re-infusion of the blood and the development of a great deal more edema and congestion in the capillary bed, there is obstruction between the pulmonary arterial wedge on the proximal side of the alveolus and the small pulmonary vein on the distal side of the alveolus, and similarly there is still a gradient between the small pulmonary vein and the left atrium. So we interpret this as showing that the first thing that happens in constriction of the small

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From a talk given before the combined medical-surgical grand rounds at Waterbury Hospital, Waterbury, Connecticut, on June 20, 1975.

pulmonary veins which leads to edema and the development of obstruction across the alveolus itself. A similar thing occurs between the mean pulmonary artery pressure and the pulmonary vein wedge which start out very close together and gradually rise during the period of hemorrhagic hypotension. After re-infusion, again there is a gradient between the pulmonary artery on the proximal side of the alveolus and the pulmonary vein wedge. We think this reflects the edema and congestion in the alveolus itself giving rise to some small gradient or obstruction at that point.

We are interested in looking at many other things that might play a role in the pulmonary damage that occurs. As has been mentioned, the lung is a final common pathway for many things. It's the only organ that receives the total blood supply, the total cardiac output at any time; all blood coming back from the periphery is filtered through the lungs and so it is subject to many different insults. We were interested in oxygen toxicity, including hyperbaric oxygen. To summarize a lot of work done by innumerable people in animals and in man, it appears that about five to six hours of pure oxygen is about all that the human being can tolerate. Once one goes past this, one is apt to get into difficulty. You are protected, as you know, by water vapor, carbon dioxide, the frequent taking off of the mask, and of changing intratracheal tubes, so that seldom do we actually get a straight six hours of undiluted oxygen into the lung. Since we know that anything above 40% oxygen can be deleterious, we try to lower oxygen concentrations below this level as quickly as possible. From the NASA experience, we know that men in space tolerated as much as 30 days of oxygen concentrations in the 35% range, so we feel this level is very safe for long periods of time. If a patient must have a 100% oxygen supply, obviously you use it. But as quickly as you possibly can, bring it down below the 40% level for the safety factor.

I mentioned that surfactant is not elaborated as much in the underperfused lung. Similarly, anything in the alveolus will tend to inactivate the effect of surfactant, whether it be plasma, red cells or dust. Looking at bronchial washings from chronic smokers who had been without cigarettes for 12 hours, you could see that there was still an inactive surfactant curve, indicating that there was still a tendency toward constriction or contraction and atelectasis of the smaller alveoli and over-dilatation of the larger alveoli, giving rise to the effects what we see in emphysema. This helps explain why chronic heavy smokers have such a difficult time postoperatively or post trauma, as far as pulmonary complications are concerned.

There are many reasons for developing intravascular clotting. Hemolysis, sepsis, mismatched blood, necrotic

tumor, fat embolism, depressed liver, and fever all cause intravascular clotting. Hemorrhage alone, as General Hardaway demonstrated in his work at Walter Reed, does not produce intravascular clotting unless other factors such as tissue trauma and plasmin are present. Nonetheless, in most of the situations we see, there has been tissue trauma, there has been release of serotonin, and there has been release of ADP causing platelet adhesion, platelet clotting and red cell clotting.

Another factor often involved is that of fat embolism and, interestingly enough, one of the causes of fat embolism is massive soft tissue injury caused by multiple whippings. These patients develop multiple fat emboli within the lung and the inflammatory response that occurs with it. It seems perfectly obvious from a lot of experiments of our own and others, that the problem in fat embolism is not just a matter of particulate fat droplets obstructing the pulmonary capillaries, but a matter of the lipolysis, the breaking down of the neutral fat into its free fatty acids such as oleic acid. These cause an intense inflammatory response and inflammatory edema in the lung gives rise to a multitude of problems. Thus the big difficulty with fat embolism is the matter of suffocation, with hypoxia and hypercarbia. The cerebral symptoms are primarily related to this. If you can take care of the pulmonary edema and prevent suffocation, you can keep patients out of difficulty.

Another important factor that I think is well recognized now by everyone is the problem of the clotting that we introduce with blood transfusions. Ordinary blood filters have a pore size of about 170 microns, which allows a lot of small clots to pass through. If one uses one of the finer filters, down in the 25-40 micron size, it has been estimated that in our best collected Red Cross units of blood one can pick up between one and five grams of clot per unit of blood. This is no problem in the healthy person who is only going to get a transfusion or two, because the lytic systems of the lungs are so active that they can very quickly lyse the clot. On the other hand, if you have a traumatized patient who is already in difficulty who may have some lung contusion and who is going to receive five, 10 or 20 units of blood, then by the time he gets 20 to 50 or 100 gm of clot in his lung he has more than he can handle. As a result of this, anytime a patient is going to receive as many as two units of blood we put in line one of the small micropore filters that will remove particulate emboli 25-40 microns or larger.

The dependent portions of the lung are the ones that get into trouble. Anytime we have restricted patient movement, there is going to be congestion of the dependent lung and decreased compliance, increased work and increasing airway resistance. This becomes a vicious cycle. In intensive care units it is obviously very

difficult to avoid this because we usually have patients on the respirator, they have tubes out of every orifice, they have catheters, they have radial artery monitoring, making it difficult to turn them. Nonetheless, every few minutes the nurses can turn a patient a few degrees from one side to the other, or elevate the head and keep him from getting congestive hypostatic pneumonia that nearly always is superimposed in the late stages.

The following are the things that we monitor to keep these patients out of difficulty. First, we watch intake and output. One of the best ways to monitor this is looking at the daily weight. Most of these patients who were having respiratory care will be on a totally humidified environment. Normally, we humidify every breath that we take in and as a result we lose about 500 to 700 cc of water per day through our lungs as insensible loss. These patients are not losing that much water and, in fact, they may be absorbing a large amount. George Burch pointed this out many years ago when many of his cardiac patients would go into frank failure during the hot New Orleans summer, where the temperature is between 90° and 100°, and the humidity is up around 100%. These patients would absorb enough water from the environment to go into failure. Certainly we have seen children treated with ultrasonic nebulization and thrown into water intoxication as a result. In addition, because these patients are not ordinarily getting very much caloric intake, they should be losing about 300 to 500 gm of body weight per day. If not, they are retaining salt water and very shortly they are going to be in pulmonary edema. Hematocrit and electrolytes must be monitored for obvious reasons.

A very simple way of following the lung function is vital capacity. Using a respirometer, you can tell whether the vital capacity is increasing or decreasing, and thereby know whether the pulmonary situation is better or worse. Also look at the effective compliance, i.e., how much pressure does it take to deliver into the patient the 500 to 1,000 cc of tidal volume. If this is getting less, then obviously they are better. If it is getting worse, then the patient is getting a stiffer and stiffer lung and something more needs to be done. Another way of monitoring it is the difference between the alveolar and the arteriolar oxygen concentration. Ideally, it can be done on 100% oxygen, in which case, the alveolar partial pressure of oxygen should be around 650 mm Hg. For most purposes, we use 40% oxygen, in which case the alveolar concentration should be around 250 mm Hg. You can accept a difference here of 25-50 mm Hg. If it gets worse than that, you know that there is shunting and one can calculate from various formulas the percent of blood that is being shunted through the lungs without being oxygenated. Hopefully, the shunt should be getting

better rather than worse. The amount of dead space that has been ventilated can be calculated from a carbon dioxide pneumogram. This is very helpful, particularly in pulmonary embolism in determining how much of the lung is being ventilated without being perfused. A chest x-ray, preferably made with the patient erect or at least semi-erect, is useful in showing a collection of pleural fluid, pneumonia, and various other things that often can be quite surprising.

Our method of prophylaxis and therapy in respiratory distress syndrome is adequate volume replacement and adequate humidity, so that there is no crusting of secretions within the tracheal-bronchial tree, and frequent clearing the tracheal-bronchial tree by suctioning. Oxygen q.s., again, utilizing whatever you need, but trying to get down as low as you possibly can as quickly as possible. We are perfectly happy to have an arterial PO₂ of 70 or so millimeters of mercury. This ordinarily will mean that your saturation is going to be 85% or more. We would much rather settle for that than to go on to much higher concentrations of oxygen, with the possibility of oxygen toxicity. In those patients who need support, as far as the ventilation is concerned, we do intubate the trachea and give them assisted respiration. Our preference is to use the nasotracheal or oro-tracheal route for the first four or five days, then if it becomes obvious that the patient has a need for continuing support, we usually will switch over to the tracheostomy. We pay a price for this because a tube does not have the means of humidifying the air or removing bacteria that the nasal passages have. Also, with the tracheostomy there can be some leakage of blood and serum into the trachea and that must be removed.

As far as respiration is concerned, our preference is to utilize slow, deep respiration. Most people, as you know, have a tidal volume of about five to seven cc/kg. That is, the average 70 kg man will breathe seven times seventy or nearly 500 cc/breath. Our preference is to more than double that and use about 12 to 15 cc of air per breath per kg, which means in an average size man a tidal volume of about a liter, and then slow the respirations down to about eight or ten per minute. Even so, you will find that this may blow off the carbon dioxide, and because we demonstrated that the low levels of carbon dioxide are also deleterious to the lung, we add enough dead space to keep the PCO₂ around 40 mm Hg. This also increases the mean airway pressure a couple of millimeters. We can help further by adding positive end expiratory pressure (PEEP). Ordinarily, as you know, we breathe against normal atmospheric pressure. With PEEP, the resistance is increased by another five, 10 or 15 cm of water. This tends to increase the air remaining in the lung, to keep many of the alveoli expanded that otherwise tend to

collapse, and thereby increases functional residual capacity (the amount of air remaining in the lung at the end of quiet expiration).

In acute respiratory failure, if the patient's functional residual capacity gets too low, many terminal respiratory bronchioles and alveoli close, and it takes considerable pressure to re-expand these. So, we like to stay above the critical closing volume and make sure that the alveoli stay open. Positive end expiratory pressure raises the functional residual capacity well above the closing volume and keeps most of the alveoli and terminal bronchioles open so there is much less physiologic shunting. Thus, blood flows past alveoli that are open and being ventilated, rather than past alveoli that are atelectatic.

We very rarely have to use more than 10, occasionally 15, cm of positive end expiratory pressure. This usually gives perfectly normal arterial saturations and we very rarely see tension pneumothorax, pneumomediastinum or anything of that nature as a result of PEEP.

Another great addition in recent years has been the utilization of the loop diuretics. These are very valuable because they are extremely effective, even in the presence of a large pigment load. If there is a lot of hemoglobin and myoglobin around, it is perfectly safe to use this for massive diuresis to get rid of any toxic products that might be present, as well as excess fluid. Our own preference is not to limit fluids, but to make sure that the urine volume equals the fluid intake. In most of our patients, we give at least a couple of liters of free water per day, making sure that the urinary output is essentially the same.

Plasma oncotic pressure is a mixed blessing. In general, if one has a traumatized lung or one that has a leaky capillary syndrome, the more albumen you put

in, the more is going to leak out. On the other hand, our own particular shock model cannot be developed unless you have some hypoproteinemia. If the patient has a relatively normal osmotic pressure, you do not have to give albumen. Use it if you need it, but remember that it can be deleterious.

Among the steroids, our own preference is methylprednisolone sodium succinate which we use because the succinate radical has been demonstrated to enter the cell much more completely and much more rapidly than the phosphate or the sulfate radical. We feel that this is valuable because we do want the steroid in the cell where it will protect the intracellular organelles, lysosomes and plasma membranes. We use it in massive doses, a gram or two given every four to six hours, for a very short period and then stop. If steroids are used for 24-48 hours only, they do not cause increased bleeding, impairment of wound healing, or increased susceptibility to infection as when used for prolonged periods of time.

And last is the utilization of specific antibiotics as needed. Our preference is a traumatized lung would be to use penicillin or oxacillin to protect against gram positive organisms and the mouth organisms because these are the ones that are seen most commonly in the lung. Then, if specific cultures show that there is another pathogen involved, obviously one should switch to the specific, appropriate antibiotic.

In summary, I feel that the adult respiratory distress syndrome is something that is related not only to the nature of the trauma or the operative and/or general medical care, but also to many iatrogenic aspects, most of which can be prevented.

I believe that ARD will soon become a vanishing syndrome.

Betamethasone Dipropionate in Psoriasis and Atopic Dermatitis

Ronald C. Savin, M.D.

Abstract—Betamethasone dipropionate ointment 0.05% was compared with hydrocortisone ointment 1% in a randomized, double-blind, study of 43 patients with psoriasis and 27 patients with atopic dermatitis. In patients with both diagnoses, betamethasone dipropionate was found to be a significantly more effective, rapidly acting anti-inflammatory agent.

Since the introduction of fluorinated corticosteroids, the topical treatment of skin diseases with these very effective agents has helped ease many serious dermatologic problems for physician and patient alike. These newer corticosteroids seem to improve every year or two and are superior as judged by reports on clinical studies and laboratory assays for anti-inflammatory activity. Moreover, their usefulness continues to increase yearly because of their superior effectiveness in such acute and chronic dermatoses as psoriasis and atopic dermatitis.

Published clinical reports abroad¹⁻¹⁰ have indicated that betamethasone dipropionate (Diprosone*) (Figure 1), a new synthetic corticosteroid with the chemical name, (9-fluoro-11 β , 17, 21-trihydroxy-16 β -methylpregna-1, 4-diene-3, 20-dione 17, 21-dipropionate) is not only highly effective but also rapid in action in a broad range of steroid-responsive diseases.

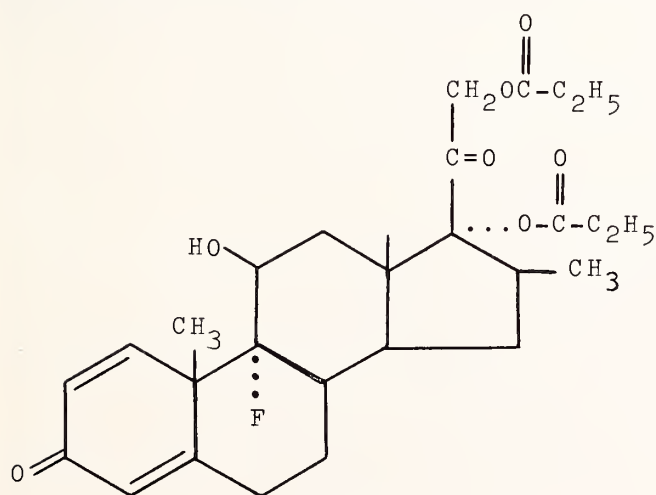


Figure 1
Betamethasone 17,21-dipropionate

*Diprosone® Ointment 0.05% (brand of betamethasone dipropionate), Schering Corporation, Kenilworth, New Jersey.

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Based on author comments and our interest in new developments, we decided to study this new preparation in psoriasis and atopic dermatitis. It has been generally accepted that topical steroids which are effective in both atopic dermatitis and psoriasis are also effective in all steroid responsive dermatoses.

The purpose of our study was to compare the efficacy and safety of betamethasone dipropionate 0.05% with hydrocortisone 1% in an identical ointment base. A double-blind paired comparison method was planned.

Materials and Methods

Forty-three patients with psoriasis and 27 patients with atopic dermatitis were treated in a randomized double-blind, comparison of betamethasone dipropionate and 1% hydrocortisone ointment. Each patient upon entering the study was assigned to either the betamethasone dipropionate or the 1% hydrocortisone ointment. The study was to last three weeks.

Eligibility for study required a clear diagnosis of psoriasis or atopic dermatitis with an overall evaluation of moderate (average: easily discernable), severe (extreme: markedly evident,) or very severe. Psoriasis of the skin was to be well defined salmon pink or rich red lesions surmounted by a characteristic silvery scaling on an erythematous base. Of the 43 patients with psoriasis, 29 had an evaluation of moderate, 13 severe and one very severe.

All patients with atopic dermatitis had a long history of eczematous dermatitis with lichenification and intense pruritus in the classical anatomic distribution. Atopic dermatitis was to consist of discrete or confluent edematous papules which were intensely pruritic in the classical anatomical distribution and becoming lichenified from rubbing. There were 26 patients with atopic dermatitis who were considered moderate, none considered severe, and one patient considered very severe.

All patients were removed from topical medication for one week prior to the study and from systemic medication for three weeks prior to the study. Systemic medications such as diuretics and digitalis were continued prior to and throughout the study. No patients were pregnant and all signed informed consents.

The ointments were applied two times per day. No occlusive dressing was used. The patients were instructed to bathe daily with ordinary soap and to use no other topicals as an emollient or bath oils.

Clinical effectiveness was rated as follows:

- Excellent—complete clinical control of condition (75% or more).
- Good—moderate clinical control (50-75%)
- Fair—partial clinical control (25-50%).
- Poor—less than 25% or worse.

Statistical evaluation was performed by the non-parametric Wilcoxon Two Sample Test. A “P” value of less than 0.05 indicates a statistically significant difference.

Results

Five patients failed to keep appointments for follow-up in the second and third week; these failures to follow-up occurred only in patients on 1% hydrocortisone. All patients on betamethasone dipropionate kept their appointments.

Psoriasis

Betamethasone dipropionate 0.05% was found to be significantly more effective than 1% hydrocortisone ointment in the treatment of psoriasis. (See Tables I, III). Betamethasone dipropionate was favored in all parameters measured including physician’s evaluation, drug effect and total symptom score. The probability that the excellent therapeutic effect provided by betamethasone dipropionate could have occurred by chance was remote. (p= <.003).

Atopic Dermatitis

Betamethasone dipropionate 0.05% ointment was found to be far more effective than 1% hydrocortisone in the treatment of atopic dermatitis. (See Tables II, III). Betamethasone was favored in all parameters

measured including physician’s evaluation, drug effect, and total symptom score. The probability factor (“P” value) was also quite low confirming the significance of the sample. (p=<.003).

There were no adverse reactions to either the betamethasone dipropionate 0.05% or the 1% hydrocortisone ointment. As mentioned earlier, the only dropout occurred after the second and third week of the study in patients on 1% hydrocortisone ointment.

Discussion

This study shows that betamethasone dipropionate is a highly effective anti-inflammatory agent for the treatment of psoriasis and atopic dermatitis and presumably all eczematous dermatitis. Human studies utilizing the vasoconstriction assay method of McKenzie and Stoughton revealed an ED⁵⁰ for betamethasone dipropionate of 1.05 ug/ml as against 3.79 ug/ml for betamethasone valerate. McKenzie and Atkinson have reported a value of 360 for betamethasone valerate on a scale in which fluocinolone acetonide had an arbitrary value of 100 (FN). Thus by comparative extrapolation betamethasone dipropionate can be expected to be a more potent vasoconstrictor than any other potent corticosteroids available today.

Although we chose 1% hydrocortisone as our standard steroid in order to provide a comparison with this new compound, we hope that subsequent comparative studies will include other leading topical steroids such as fluocinolone acetonide and betamethasone valerate.

Table I
PHYSICIAN’S OPINION OF DRUG EFFECT
PSORIASIS

	Excellent	Good	Fair	Poor	Exacerbation	No Visit or Fail	
Betamethasone** Dipropionate	6	11	5	0	—	—	Week I p < .0001*
Hydrocortisone**	0	5	11	5	—	—	
Betamethasone Dipropionate	12	8	2	0	—	0	Week II p < .00001*
Hydrocortisone	0	7	9	4	—	1	
Betamethasone Dipropionate	13	7	2	0	—	—	Week III p < .00001*
Hydrocortisone	0	6	8	4	1	2	

*Probability associated with a difference between the two groups.
**Betamethasone Dipropionate, 0.05%; Hydrocortisone, 1%

Table II
PHYSICIAN'S OPINION OF DRUG EFFECT
ATOPIC DERMATITIS

	<i>Excellent</i>	<i>Good</i>	<i>Fair</i>	<i>Poor</i>	<i>Exacerbation</i>	<i>No Visit or Fail.</i>	
Betamethasone**	9	6	0	0	0	—	Week I $p < .002^*$
Dipropionate							
Hydrocortisone**	1	6	3	1	1	—	Week II $p < .002^*$
Betamethasone							
Dipropionate	10	3	0	0	0	—	Week III $p < .002^*$
Hydrocortisone	1	5	3	1	1	1	
Betamethasone							Week III $p < .002^*$
Dipropionate	10	1	0	0	0	—	
Hydrocortisone	1	4	4	1	1	1	

*Probability associated with a difference between the two groups.
**Betamethasone Dipropionate, 0.05%; Hydrocortisone, 1%

Table III
MEAN TOTAL SYMPTOM SCORE
PSORIASIS

	<i>Initial</i>	<i>Week 1</i>	<i>Week 2</i>	<i>Week 3</i>
Betamethasone**	8.4	3.2	2.3	2.0
Dipropionate				
Hydrocortisone**	8.0	5.4	5.0	5.2
	$p > .54^*$	$p < .0002^*$	$p < .0002^*$	$p < .000006^*$

	<i>Initial</i>	<i>Week 1</i>	<i>Week 2</i>	<i>Week 3</i>
Betamethasone				
Dipropionate	6.5	1.2	0.7	0.4
Hydrocortisone	7.0	4.2	3.9	3.7
	$p > .29^*$	$p < .000094^*$	$p < .00005^*$	$p < .00009^*$

*Probability associated with a difference between the two groups.
**Betamethasone Dipropionate, 0.05%; Hydrocortisone, 1%

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Amniocentesis: Application to Fetal Well-Being and Maturity

Cyril Newman, M.D.

The fetus is bathed in a fluid which insulates it from harm, provides an even temperature and allows symmetrical growth. How do we invade this universe and what do we evaluate in determining the well being of the suspended occupant?

Procedure

Amniotic fluid is removed through a transabdominal technique for genetic evaluation, estimation of gestational length or for determining if the fetus is undergoing distress.

The patient voids prior to the procedure. She is placed in a supine position for the abdominal examination. Fetal position, the uterine size and presence of fetal heart tones are determined. The abdominal wall is then prepared with Betadine, and the area to be entered is isolated with sterile towels. The site of injection is anesthetized, and a 20 gauge spinal needle with trocar is passed through the abdominal and uterine wall. Approximately 5 to 10 cc of amniotic fluid is removed and placed in a sterile tube. This is covered with tape to prevent light from affecting the optical density of the fluid. The sites selected for amniocentesis are: 1) 1-2 cm to the right or left of the maternal umbilicus, on the side of the fetal arms and legs, 2) to the right or left of the fetal nuchal area aiming for the area near the nape of the neck, 3) suprapubically, lifting the fetal head or breech out of the pelvis and aiming for the amniotic fluid under the presenting part.

Complications

Ultrasound has proven helpful in localizing a suitable pocket of amniotic fluid safely away from the placental site of implantation and fetal vital parts. Introduction of ultrasound has decreased the incidence of bloody taps to less than 10% and the morbidity to 1-2%. If blood is obtained, it should be examined for fetal cells, and the fetal heart auscultated. If fetal blood is present and distress is occurring, rapid delivery via Cesarean section is indicated in an otherwise survivable infant. Creasman, Lawrence and Thiede¹ have noted that amnionitis has occurred as well as injury to fetal liver, brain, chest, heart, and lung. These are rare events but an ever present possibility and suggests that amniocentesis is not a routine procedure. Following a

tap, the fetal heart rate is routinely obtained and recorded, and the patient discharged.

Meconium Presence

There has long been an association between dark colored amniotic fluid present in patients whose infants die during labor. Sailing² demonstrated via amnioscopy that passage of meconium related to fetal anoxia and distress. This event implies impending danger to the fetus, and delivery should not be unduly delayed.

Post-Maturity

Post-maturity syndrome may occur following a gestation of 42 weeks or longer. This occurs in 7 to 12% of all gestations with the perinatal mortality rate doubled at 43 weeks.³ The mortality increases markedly in the presence of meconium in this syndrome.

Bilirubin Levels

Bilirubin can be present in elevated amounts in Rh disease, and this affects the opacity of the amniotic fluid. The level of bilirubin is measured spectrophotometrically at a specific wavelength of 450 mu. Two uses are made of the bilirubin level in clinical practice: 1) estimation of the fetal age in non-sensitized pregnancies, and 2) determination of the severity of iso-immunization in affected pregnancies.

Estimation of Fetal Age

Mandelbaum⁴ plotted the optical density of the bilirubin throughout normal pregnancy. He showed a progressive decrease in its concentration. This may be due to the maturation of the fetal liver enzymes involved in bilirubin metabolism. The peak that occurs at 450 mu in early pregnancy usually disappears after 36 weeks gestation. This observation helps to determine whether a fetus is over 36 weeks or not and is an adjunct in ascertaining fetal maturity.

Iso-immunization

The work of Bevis⁵ and Liley^{6,7} have helped to save many infants who would have succumbed early in pregnancy to hemolysis, anemia and hydrop fetalis, hallmarks of erythroblastosis fetalis. Amniocentesis is performed in all pregnant patients with an indirect Coombs titer greater than 1:8. The tap may be performed as early as the 24th week, and the test is repeated 10 days to 2 weeks apart. The optical density difference is plotted on a graph similar to Figure 1. If the readings show a falling level of bilirubin and

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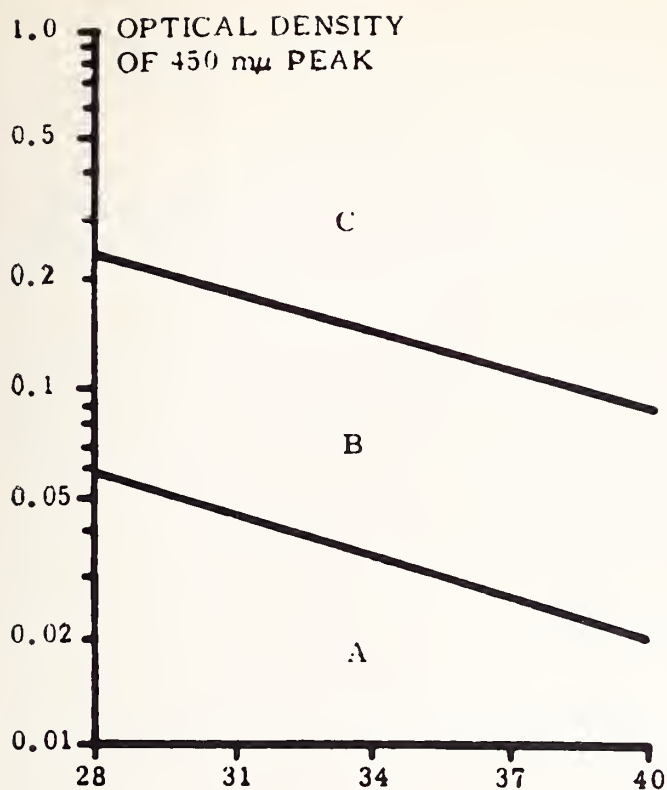


Figure 1

Clinical significance of the size of the amniotic fluid pigment peak at different maturities. Zone A, mild or no hemolytic disease. Zone B, moderate. Zone C, severe. (From "Amniocentesis and Amniography in Hemolytic Disease" by Liley, A.W., in 1964-1965 YEAR BOOK OF OBSTETRICS AND GYNECOLOGY by Greenhill, J.P. (ed.). Copyright © 1965 by Year Book Medical Publishers, Inc., Chicago. Used by permission).

remain in Zone A, the fetus will be unaffected or mildly affected with hemolytic disease, but further taps will be necessary until delivery. Readings that are horizontal or rising and lie in Zone B (moderately affected) or Zone C (severely affected) may require intrauterine blood transfusion. Rh negative packed cells are introduced into the fetal peritoneal cavity. Sixty percent of these cells are absorbed and will temporarily correct the fetal anemia. This will gain valuable intrauterine time for the premature fetus which would otherwise succumb to Respiratory Distress Syndrome if delivered early.

Osmolality of Amniotic Fluid

Battaglia, et al⁸ and Seeds⁹ demonstrated that the solute concentrations of amniotic fluid in early pregnancy has a solute content similar to maternal plasma except for elevated chlorides and a lower protein concentration. As pregnancy progresses to term, a decrease in total solute concentration and sodium content occurs. The amniotic fluid osmotic pressure at term is 20 to 25 mOsm/liter lower than maternal plasma values. This relationship was utilized by Miles and Pearson¹⁰ in correlating amniotic fluid osmolality level of 250 mOsm/liter, or less as suggestive of fetal age of 37 weeks or greater.

Creatinine Level

Fetal urination has been demonstrated in rhesus monkeys¹¹ at the rate of 0.03 ml/minute. The accumulation of creatinine in the amniotic fluid is thought to occur via kidney excretion into the amniotic fluid. Creatinine represents increased muscle mass and maturing kidney function. Pitkin and Zwireck¹² found that the creatinine level remained fairly constant in the amniotic fluid until the 34th week. There was an abrupt rise in the creatinine concentration after 37 weeks to a level of 2 mg%. A value of 2 mg% or greater indicated a fetus may be 37 weeks or older.

Desquamated Sebaceous Fat Cells

The fetal sebaceous glands shed cells at 34 weeks and become more active at approximately 38 weeks. Brosens and Gordon¹³ and Bishop and Corson¹⁴ demonstrated the usefulness of this fact by staining these cells with 0.1% aqueous Nile Blue sulfate. Those cells with fat stained orange, and other cells stained blue. Five hundred cells are counted, and the following index for maturity is used:

- Under 34 weeks = < 1% orange cells
- 34-38 weeks = 1-10% orange cells
- 38-40 weeks = 10-50% orange cells
- Over 40 weeks = > 50% orange cells

Lecithin Sphingomyelin Ratio

The tests previously described indicate possible maturity of the fetus. None will predict with reliability whether the fetus will develop "respiratory distress syndrome" following delivery. The levels of lecithin to sphingomyelin in the amniotic fluid are closely correlated to the development of lung maturity. Reynolds and Strand¹⁵ demonstrated that the alveolar surface requires a lining of film with low surface tension. The surfactant will allow the collapsed alveoli surfaces to expand with the initial onset of respiration following delivery and prevent the collapse of alveoli at the end of expiration, thus permitting retention of a residual volume of air. If surfactant is present in inadequate amounts, the development of atelectasis, acidosis, possible membrane formation, and hindrance of oxygen transport may occur. These events require greater energy utilization by the compromised infant, and the possibility of fetal demise is markedly compounded.

The surfactant is a phospholipid, lecithin, and its concentration can be demonstrated by thin layer chromatography. Gluck, et al⁶ showed that lecithin concentration rises in the amniotic fluid at 35 weeks while sphingomyelin, another phospholipid, decreases. A ratio of lecithin to sphingomyelin of 2:1 or greater indicates pulmonic maturity. Lecithin values can be elevated falsely with a blood tap or meconium.

A lowered value may be seen when the specimen is kept at room temperature.

Genetic Considerations

Prenatal diagnosis of genetic disorders is helpful in the diagnosis of Down's, Turner's and Klinefelter's syndrome and in sex linked disorders. The amniotic fluid can be analyzed for the absence or elevated levels of certain enzymes, amino acids, hormones and for abnormal metabolic products.

Conclusions

Astute clinical observation and evaluation with the benefits of indicated amniocentesis will continue to improve the perinatal well being of the fetus and enhance survival in high risk pregnancies.

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Cataract Surgery: An Out-Patient Procedure

Miles A. Galin, M.D., and Vivien Boniuk, M.D.

Abstract—Cataract surgery has been performed for nearly 2,000 years. Present techniques have reached sufficient sophistication that it is not essential for many cataract patients to be hospitalized for this type of surgery. The nature of lens development, cataract formation and surgical management are briefly presented.

A cataract in the simplest definition is merely an opacification of the crystalline lens of the eye. There are many types and varieties of cataract, but by far the commonest is the so-called senile cataract, the one most frequently associated with aging. Certain types of cataract occur for which the cause is readily apparent, such as those secondary to galactosemia or subsequent to ocular trauma. We will confine our discussion here, however, to the senile type which is of unknown

etiology, and for which major advances in surgical therapy have occurred in the past decade.

The pathogenesis of cataract deserves some comment. The lens itself is a rather unusual anatomical structure. It is formed in early embryonic life from an invagination of surface ectoderm of the embryo to form a lens pit and then a lens vesicle.¹ This structure, even at that point, is unique in that the epithelium is facing the interior of this vesicle and the outer portion is made up of the basement membrane of the original ectodermal cells (fig. 1). Throughout growth in embryonic and fetal life, and indeed into adulthood, this inside-out relation, remains. The basement membrane develops into the capsule of the lens and the lens epithelial cells mature in such a way that they become elongated, lose their nuclei and form fibers. Since these epithelial cells have no connection whatsoever to the outside, no material that is formed during life is ever lost and, consequently, the lens becomes thicker and denser throughout life in the normal process of aging. This developmental characteristic of the anatomical structure of the lens accounts for the high prevalence of at least some opacification of the lens in all elderly people. Further, it explains the oft

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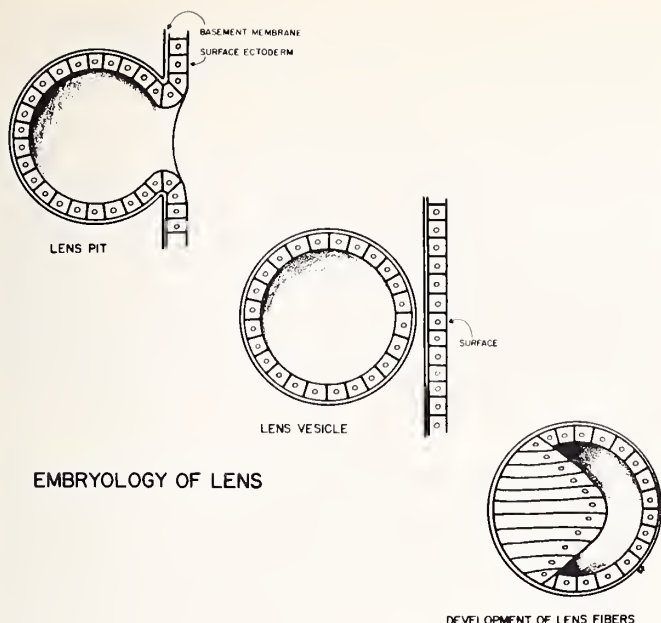


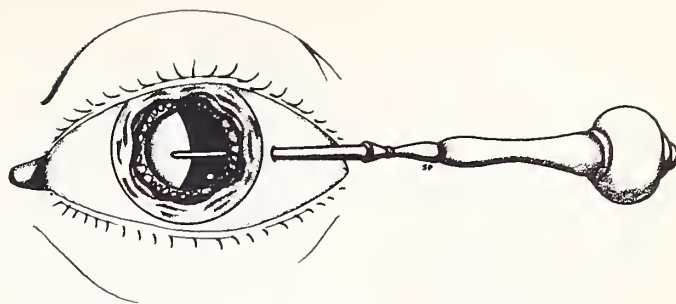
Figure 1

After thickening of lens placode, and its invagination to form the lens pit and then the lens vacuole, there is an "inside out" relationship—that is—epithelium is on the outside, a relationship which persists throughout life.

heard dictum that, "if one lives long enough, one is likely to develop a cataract." Senile cataract and its surgical treatment is then, primarily, a disease of the elderly; the vast majority of patients operated upon for cataract are more than 60 years of age.

The opacification of the lens which, if severe enough, may be seen as a whitening of the normally black pupil, is a clinical entity that has been known and described since ancient times. It is not clear in which civilization cataracts were first described, but there is some record of the "couching" technique by which cataracts were treated nearly 2,000 years ago. Couching is still a common "out-patient" surgical method of treating senile cataracts and is practiced mostly in developing countries. Basically, this technique involves the insertion of a needle or other instrument into the eye in such a way as to dislocate the lens from the pupillary axis and have it fall out of the pupillary space, usually back into the vitreous—thus allowing free passage of light rays through the pupil to the light sensitive cells of the retina (Fig. 2). This ancient technique is, of course, fraught with complications and is never considered as an operative possibility if more controlled methods of surgery are available. Two of the more popular and acceptable techniques practiced in the United States today, which lend themselves best to the surgical management of the cataract patient as an out-patient, are discussed in more detail below.

No matter what technique is used for cataract extraction, a sequence of advances has accounted for the improved surgical results which have led to ambulatory surgery. These include the progressive



COUCHING

Figure 2

The needle is inserted into the eye so as to dislocate the lens from the pupillary space, (usually into the vitreous) and allow free passage of light rays through the pupil to the light sensitive cells of the retina.

refinement of sutures used to close the incision; the development of finer and more precise instrumentation; and the availability of lighting and magnifying systems that permit exact localization. At the present time, the anticipated success rate of a cataract operation is consistently from 95% to 98%, which is indeed a very commendable success rate for any operation.

There are a lot of traditions in ophthalmology as there are in every branch of medicine regarding management of patients, and these traditions upon questioning often have little basis in fact, or rational explanation in the light of present knowledge. One of these myths which has been perpetuated in the ophthalmological profession has been the insistence on immobilization and prolonged hospitalization of the post-operative cataract patient. In the days prior to the use of sutures to close a cataract incision, there was perhaps some validity in maintaining the patient at total bedrest with sandbags on both sides of the head to prevent any undue movement. Though wounds are now virtually watertight, the heritage of immobilization has been difficult to dispel even though, in general, in elderly patients, the immobilization itself can be more detrimental to the patient's health and possible life than any detriment caused by eye movement. Despite this well known observation and a variety of data from recent well conducted studies which dispel the "voodoo" associated with cataract extraction,²⁻⁵ advances in therapy have met with classical physician disbelief and inertia.

In the most commonly practiced type of cataract operation, an incision is made adjacent to the limbus of the eye for approximately 140° (Fig. 3a). Through this incision, the lens is extracted with the use of forceps of various types (Fig. 3b), various suction apparati (Fig. 3c), or with the use of freezing instruments (Fig. 3d). There are minor variations in terms of whether the conjunctiva is incised at the limbus or away from the limbus and then dissected towards it; there are

surgeon's preference. The type of suture material varies from gut or silk of 6 to 7 zero thickness to fine synthetics—essentially invisible except with the use of an operating microscope.

In a routine cataract extraction in which no other ocular disease is present to complicate the procedure or in which no untoward development occurs at the time of surgery, minimal tissue trauma should be evident post-operatively. It is true in eye surgery—as in any other type of surgery—that the gentleness with which the tissues are handled determines the comfort of the patient and the appearance of the incisional area afterwards.

The anesthesia chosen by most ophthalmologists for cataract procedures is local, and this should incur no more reaction in the patient than that incurred by the use of local anesthesia in dental work. With general anesthesia, the return to pre-anesthetic homeostasis is more delayed than with local anesthesia and, in general, precludes immediate discharge from the hospital, though not same day discharge. In addition, over-sedation of patients and over-medication, both pre and post-operatively, may prevent immediate ambulation and discharge. The promiscuous “routine” use of such drugs often creates problems of orientation and balance in elderly patients who are usually quite responsive to narcotics, various tranquilizing drugs and barbiturates. These agents are usually unnecessary and are rarely used by the authors.

Interest in the decreasing time of post-operative hospitalization of the cataract patient began in and around 1958 in New York City, but was studied prior to that time in a few areas of the United States. The tradition was to keep the cataract patient in the hospital an average of 10 days. Since there was no satisfactory answer to the question: Why should one keep a cataract patient in the hospital 10 days?, A study was undertaken in which the time patients remained in the hospital was progressively reduced, though the technique of surgery and pre and post-operative care were unaltered. A series of 100 patients was sent home after 9 days, and gradually each group of 100 patients, was sent home one day earlier until the time of hospitalization was 4 days. At that time, the use of all pre and post-operative drugs was discontinued and the patient ambulated immediately after the procedure. Each succeeding 100 patient groups were handled this way and hospitalized one day less until patients were discharged immediately.

In 1973, the results of this approach were studied and analyzed to evaluate the incidence of post-operative complications in those patients who were discharged immediately compared to those patients who remained in the hospital for variable periods of time.³ Though this was a retrospective study, it did

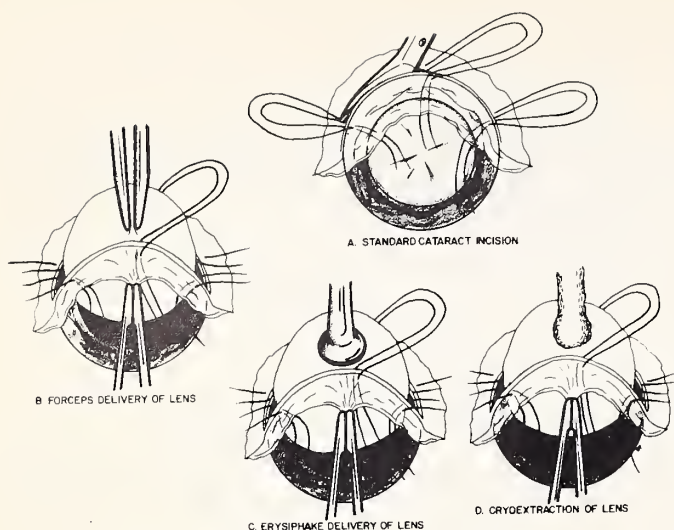


Figure 3

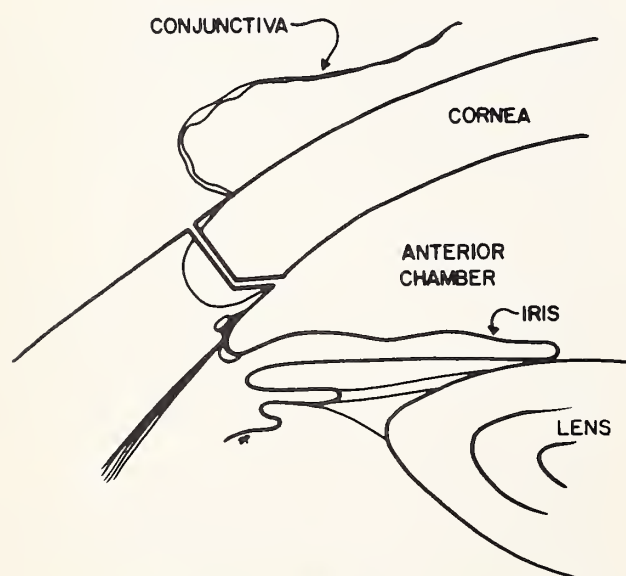
A. An incision is made adjacent to the superior limbus for approximately 140°.

B. The lens is extracted utilizing a specially constructed forceps.

C. A suction apparatus is used to deliver the lens.

D. The cryoprobe is applied. After a visible ice ball forms, indicating a firm adhesion, the lens is delivered.

variations in the types of cutting instruments used to enter the eye and to extend the incision, but, basically, the principles are entirely similar. If the incision in the eye, by whatever means, is created in such a way that a morticed incision is made and the anterior two-thirds of the incision extends vertically, whereas the posterior one-third extends virtually horizontally (Fig. 4), a very tight and firm wound closure will be created—enhanced by the use of from 2 to 12 sutures depending on the



MORTICED INCISION AT LIMBUS

Figure 4

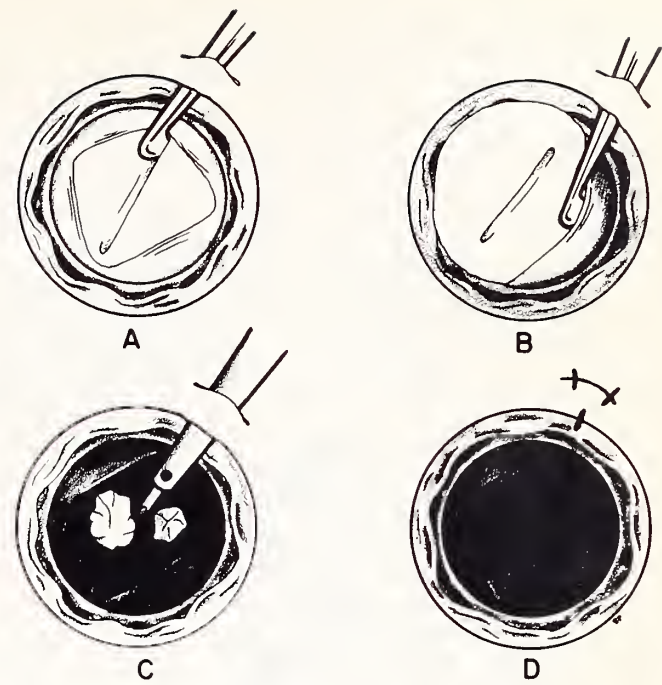
The anterior two-thirds of the incision extends vertically, whereas the posterior one-third extends virtually horizontally. This forms a morticed incision—which allows for a very tight and firm wound closure after removal of the lens.

show that the incidence of complications in immediately discharged ambulatory patients was not significantly different than in those patients who were kept in the hospital from 1 to 10 days.

A subsequent study has been completed in which a prospective analysis was performed, as well.⁶ In this study, patients were randomly given groups assigned by this institution's Computer Center scientists. These designations were placed in sealed envelopes and were not opened until the operation had been completed. The patients had been informed that they would either be discharged immediately, would remain in the hospital 1 day, or would be in the hospital for 3 days. In this carefully controlled, highly statistically significant prospective study, it was conclusively shown that there was absolutely no difference whatsoever in results. It must be emphasized at this point that those patients who are operated upon in an ambulatory way are indeed followed and observed daily and probably much more carefully than those patients who remain in the hospital. They were examined with optimum instrumentation and under the optimum conditions that are available in the private office and which are less readily available in most hospital settings.

Another variety of cataract extraction technique has been developed recently which involves the use of a "phakoemulsifier."⁷ In this operation, a 2 to 3 mm incision is made into the eye at the limbus and an instrument with a controllable vibrating tip, is inserted into the lens (Fig. 5). This emulsifies hard lens material so that it is readily aspirated and a clear opening is obtained in the pupillary area. The anterior capsule is initially removed and the posterior capsule of the lens is left behind. With this procedure as well, patients do not need hospitalization. Further, in theory, problems with wound healing should be less than those with a larger incision, though this is probably more theoretical than real. The success rate of this operation is approximately the same as with the previously described type of cataract extraction,⁸ and further disproves most of the ritual attached to the handling of cataract patients.

Whichever procedure is used, what are the advantages of immediate ambulation and discharge of the cataract patient? They are both scientific and social. The patient is returned to familiar surroundings, familiar organisms, and familiar intake and elimination programs that had permitted him to function well prior to the procedure. Patients do not fall out of bed at home, become disoriented at home, or find themselves unable to void, to mention but a few examples. The social advantages, to the patient and society are overwhelming, and not just in the economic sphere. Patients return to work sooner, resume family



PHACOEMULSIFICATION

Figure 5

After a 2-3 mm incision is made at the limbus, an instrument (cystotome) is inserted into the eye to separate the anterior lens capsule (A and B). Then a controllable vibrating tip is inserted into the lens (C) which emulsifies and aspirates lens material so that a clear opening is obtained in the pupillary area (D).

obligations sooner, and, in general, are self sufficient sooner.

Immediate discharge saves the third-party carrier and ultimately the payer of premiums an incredible sum of money even in areas where rates are less than the \$200/day charged in New York City. The payment of disability benefits is reduced as well, loss of income is less and employer costs go down. Considering these facts in the light of the very high prevalence of insurance coverage to pay for hospital care, it is all too obvious that physicians and patients have become too casual about remaining in the hospital.

Tradition dies hard, and though it was anticipated there would be reluctance on the part of the ophthalmologists to adopt new concepts, it was startling to find that insurance carriers, particularly Blue Cross, have premeditatedly been guilty of dragging their feet on this issue. In all cases, Blue Cross has refused reimbursement to patients who were operated upon and immediately discharged from the hospital, but who remained in non-hospital facilities, such as hotels because they come from distant locations. Despite fixed costs for room and board of \$50/day in contrast to \$200/day, Blue Cross refuses to give more than their casual lip service to the issue. (Fig. 6)

Our country is in an economic crisis and our hospitals are in a serious fiscal crisis which could be



Figure 6

The consumer bears the brunt of unnecessarily high costs of hospitalization.

assisted by the formation of "out-patient surgery units" on a widespread basis around the country. This would allow patients to be admitted briefly for the duration of the operation and then immediately discharged, either to their own homes or to a self-care or motel facility which could be about 1/10 the cost of the hospital facility. This would result in tremendous savings to the patient, the doctor, the insurance carrier, the government, and to any consumer of medical and hospital care. We are the ones who pay the price in the end.

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Treatment of Acromioclavicular Separations in Athletics

Norman A. Zlotsky, M.D.

Abstract—Treatment of acromioclavicular separations is discussed based on 3 types of injury. The development of early degenerative arthritis in those patients with a slightly incongruous joint and return to strenuous athletics is emphasized. This is taken into consideration in the treatment regimen.

Introduction

Acromioclavicular separation is a common injury in many sports where a direct blow to the point of the shoulder can occur. A partial list includes football, soccer, lacrosse, wrestling, and gymnastics as the most commonly involved sports. The injury can also occur by a force transmitted thru a fall on the outstretched hand or elbow up the arm to the acromioclavicular joint but is much less common. Well fit protective pads in football and lacrosse as well as good coaching which stresses how to roll in a fall can decrease the incidence of this injury. When it does occur treatment should be based on the type of injury.

Types of Injury

This injury can be divided into three main types:

Type I is due to compression or distraction of the joint without force significant enough to tear the local ligaments. There may be local swelling due to contusion of the overlying soft tissues from the direct blow and tenderness. X-Rays show no changes of widening or elevation.

Type 2 is injury of sufficient force to tear the local acromioclavicular ligaments without damage to the conoid or trapazoid (coracoclavicular) ligaments or significant tearing of trapezius or deltoid attachments to the clavicle. There may, however, be some periarticular periosteal elevation on the clavicular side of the joint which shows up later as new bone formation. X-Rays show widening of the joint space and a comparison film is important since the joint space varied from 2 to 8 mm. in a group of normal subjects. Pain, swelling and tenderness are significant and anteroposterior rocking of the clavicle is increased.

Type 3 injuries are those of sufficient magnitude to tear both acromioclavicular and coracoclavicular ligaments as well as trapezius and deltoid attachments. There is clinical evidence of elevation of the distal end

of the clavicle with significant pain, swelling and tenderness as in Type 2. Beside the increased anteroposterior motion there is ballotable up and down motion. X-Rays show widening and elevation of the distal clavicle. In my experience X-Rays with weight in the hands are unnecessary and a comparison film with the normal side is sufficient to make the diagnosis.

Treatment

Type 1 may be treated symptomatically with ice packs and a sling as needed for pain. Moist heat may be started after 3 days with range of motion and resistance exercises especially deltoid, trapezius and rotators in limits of pain. Most such patients are back to full activities and asymptomatic in 3 weeks. Permanent impairment is uncommon, but can occur where compression of the joint causes chondral damage. Degenerative changes whether symptomatic or not can occur within 3-6 months in young active athletes.

Treatment in Type 2 injuries is non-operative. In those instances where complete control of the patient can be maintained as in the military service, a "California harness" (Figure 1) may reduce and maintain the joint for 6 weeks. Where absolute control of the patient cannot be maintained, symptomatic treatment as with Type 1 is the treatment of choice though the average time to asymptomatic full function is 6 weeks. Patients *returning to strenuous athletics* show degenerative changes in 3-6 months in a high percentage of cases, whether symptomatic or not. Though there was no correlation with symptoms, those treated with the harness showed degenerative changes to a lesser degree. The following case shows the described changes. An 18 year old white male fell on the point of his right shoulder in wrestling practice with pain and swelling over the acromioclavicular joint. X-Ray showed slight widening compared to left (Figure 2A, B). The patient was treated symptomatically and 6 months later showed degenerative changes, resorption, irregularity and periosteal new bone by X-Ray (Figure 2C) and pain with strenuous use. The degenerative changes can frequently be better seen with a lordotic view (Figure 2D). In those cases which remain symptomatic in both Type 1 and 2 with underlying degenerative changes, excision of the distal clavicle is usually curative.

Surgical treatment in this injury is reserved for Type 3 injuries. The aim of surgery is not so much the re-establishment of joint congruity which is almost impossible to exactly accomplish, but the resuture of deltoid and trapezius which after rehabilitation will

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Figure 1
"California Harness"



Figure 2B
Normal side, lordotic view.



Figure 2C
Injured side 6 months post injury with resorption, irregularity, and periosteal new bone.



Figure 2A
Injured side, slight widening, no elevation.



Figure 2D
Injured side 6 months post injury, lordotic view, showing changes more clearly.

correct the functional loss of weakness and pain with shoulder use especially throwing and stick handling in those unrepaired. The tender prominence is also a residual problem if unrepaired. There are many methods of repair from closed reduction and percutaneous pinning to various open reductions and pinnings or coracoclavicular fixations with screws and loops of wire and more recently, dacron with or without attempts at ligament reconstruction. As stated above, it is almost impossible to exactly and congruously reduce the acromioclavicular joint, leaving one with a Type 2 residual, after the above repairs. In those athletes *returning to strenuous activity*, a high percentage in my experience will develop early degenerative changes and a group of these will be symptomatic with stress. A second procedure consisting of excision of the distal clavicle will be required. For this reason, I now repair Type 3 injuries with an excision of the distal clavicle to avoid later degenerative changes, some of which will be symptomatic,

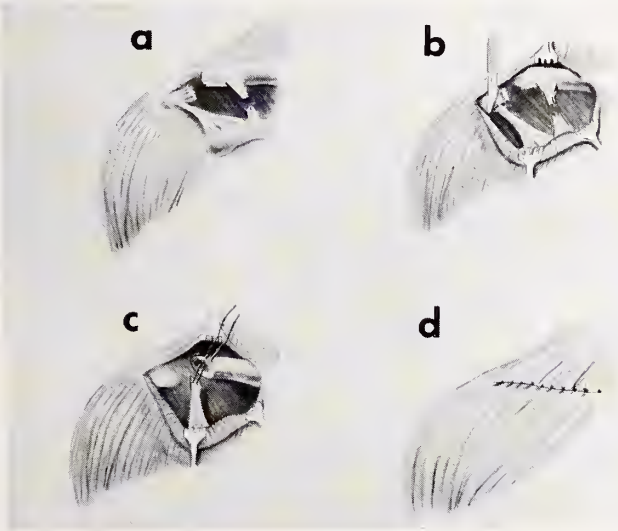


Figure 3

a) Damage in Type 3 injury: tear acromioclavicular and coracoclavicular ligaments as well as muscle attachments of deltoid and trapezius to clavicle: b) dissection and release of coracoacromial ligament from acromion: c) distal 3/4 inch of clavicle excised beveled inferiorly, curette medullary cavity to accept coracoacromial ligament inserted through drill holes (clavicular level adjusted by length of ligament) d) snug repair of deltoid and trapezius.

reconstruction of the coracoclavicular (conoid and trapazoid) ligaments by detaching the coracoacromial ligament from the acromion and inserting it into the beveled cut end of the clavicle, thru drillholes under the necessary tension to reduce the elevation of the clavicle, and a careful repair of the overlying avulsed deltoid and trapezius attachments. (Figure 3). I have been unaware of any residual weakness due to excision of the distal clavicle, once rehabilitation is complete. Tenderness of the scar is occasionally a problem in wrestlers for a number of months but this can occur no matter what type of repair is done. Weaver and Dunn have reported one case of subsequent rupture of the reconstructed ligament, sixteen months post-op, while chopping wood. Re-repair was successful and I have not had this complication to date.

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The Yale School of Medicine and Community Health Institutions: Effecting the Partnership

Samuel P. Korper, M.P.H., M.Phil.

Beyond the traditional responsibilities of medical centers, social and legislative developments at both national and local levels are creating additional incentives for the maintenance, review and/or establishment of cooperative programs between the medical center and community health institutions. For example, recently passed and pending federal health and health-related legislation in the manpower area, which has created a host of new roles and relationships, is placing pressure on medical centers to provide education in and find quality training opportunities for its students in new settings.

Community hospitals, as well, have felt increasing pressure to work more closely with academic medical centers. Federally directed review of quality of care, reinforced by burgeoning forms of relicensure or recertification, have made the medical center a logical place to turn for assistance in the development of programs in continuing education as well as the actual teaching resources required for such activities. Additionally, the abolishment of free standing internships and revised requirements for residency training have created new concerns for community hospitals with respect to the development or maintenance of house-staff programs.

A meaningful relationship with a university medical center, with opportunities for house-staff rotation both to and from the community hospital, provides an effective means of dealing with the increasing service and training demands on the community hospital. This approach aids in the recruitment of top flight house-staff for positions in community hospitals, brings the strong educational resources of the medical center to the community hospital, provides high quality clinical training in a variety of settings for the house officer, and aids in the development of rational and effective referral patterns for the region—all resulting in better patient care.

For many years, there have been working relationships between a number of Connecticut community hospitals and the Yale School of Medicine. Until recently, however, these relationships were of a relatively informal, often entirely personal nature. Individual faculty members would journey to community hospitals to conduct rounds, lead seminars, deliver lectures, and consult on matters of house-staff training or hospital services. These working relationships were

often based on previously established personal contacts with former students or house officers from the medical center. Faculty members who participated often did so with little or no formal support from their departments or the parent institution.

With the establishment of the Regional Medical Programs Legislation (PL 89-239) in 1966, the federal government expressed a direct concern for the translation of medical research into improvements in patient care in the community and provided financial support to accomplish this goal. In Connecticut, the Connecticut Regional Medical Program (CRMP) established a plan for a system of affiliations of community hospitals with one of Connecticut's two medical schools, and encouraged the appointment of full-time chiefs of service at the community hospitals.¹ During this period, the Office of Regional Activities was established at the Yale School of Medicine to facilitate and coordinate the School's various CRMP-supported and other regional activities.

With much left to accomplish, Yale's regional program has now grown to the point where, in the past year, 158 Yale medical students spent a portion of their time training in affiliated community hospitals, with training experiences offered in medicine, surgery, pediatrics, obstetrics, gynecology, radiology and pathology. During this same period, 29 Yale-New Haven Medical Center house officers and an additional 3 Yale post-doctoral fellows rotated through affiliated community hospitals for a portion of their training, while 15 community hospital fellows rotated through Yale-New Haven Medical Center. The existence of 71 full-time chiefs of service, a total of 199 full-time physicians on staff and some 321 physicians at the Yale affiliated hospitals holding clinical faculty appointments at Yale School of Medicine contribute to the quality of the training experiences at these hospitals. The development of affiliations and the encouragement of Yale faculty involvement in teaching and service programs at community hospitals have been major activities of the Office of Regional Activities since its inception.

During the past five or six years preliminary affiliations have been established with several community hospitals; setting the general guidelines for joint programs of service, education, and clinical research. Such preliminary affiliations were viewed as the first step in creating formal institutional ties between the School and the community hospitals and laid much of the groundwork for the development of the specific

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programs that followed. Yale faculty have been active on search committees for the recruitment of full-time chiefs of service for the community hospitals, as well as in the establishment of a variety of post-graduate and continuing medical education programs.

A number of these preliminary relationships have now matured to the point where full five-year teaching affiliations with community hospitals are in effect. The affiliations developed by the Yale School of Medicine with community hospitals in Southern Connecticut are designed to meet the challenges expressed in the opening paragraphs of this article. Agreements are flexible. Each agreement, by focusing on programs at the departmental or specialty level, is tailored to specific needs as perceived by the community hospital, where these needs are compatible with the resources of the relevant departments at the School. At the present time, such agreements exist with the Danbury Hospital, Griffin Hospital in Derby, the Hospital of St. Raphael in New Haven, Waterbury and St. Mary's Hospitals in Waterbury, Norwalk Hospital, Bridgeport and St. Vincent's Hospitals in Bridgeport, and Lawrence and Memorial Hospitals in New London.²

The five-year affiliation agreements are written in two parts.³ Part One establishes the basic nature of the affiliation including the general objectives of "... care of patients, effective medical education, (and) productive clinical and health care research." Part Two of each agreement delineates the specific programs that comprise the actual working activities of the affiliation. Once the affiliation is effected, the hospital and the School each appoint members to a Joint Affiliation Committee which meets periodically to review the status of the affiliation, individual program components, and to chart new areas for joint activity.

As part of the expanded commitment to community based programs, the School has recently undertaken a thorough review of its existing programs of continuing medical education, based upon information provided by the community hospitals, medical school departments and administration, and an essential resource for the program, the full-time faculty. As a result of this review it was recognized that a lack of coordination of activities has had deleterious effects within and between the departments of the Medical School, as well as on community hospitals which have requested medical faculty participation. Among the most vexing problems was the fact that the program of continuing medical education had lost much of the support of the departments, and this, of course, threatened its viability. Also, the lack of program coordination threatened the program's accreditation. The growth of programs and centers for the study of specific concerns, such as those in gastroenterology, cancer, pulmonary disease, etc., had prompted new kinds of outreach activities. Further, the antiquated fiscal

structure of the program, which had not been revised since 1968, threatened the viability of the program due to the loss of departmental incentive vital to such an endeavour.

For these reasons the school instituted a series of changes in its continuing education program effective July 1, 1975. The first of these changes, based upon departmental initiative, has already been implemented. This entails the development of contractual "packages" where the level of activity requested by hospitals is of such magnitude that a departmental commitment is required to successfully fulfill that hospital's education program requirements.

These packages, which are tailored to individual hospital needs, often include elements of house staff recruitment and training as well as other components designed to satisfy the requirements of approved postgraduate training programs. Such packages exist or are being developed at the present time with several affiliated hospitals by the Departments of Medicine, Obstetrics and Gynecology, and Pediatrics.

Where the expected total level of activity does not require the development of such a package, faculty continue to be available for individual conferences, rounds, and presentations at community hospitals. However, uniform procedures for the scheduling and reimbursement for these educational activities at community hospitals have been developed. All requests for full-time faculty participation in educational programs with affiliated institutions are now coordinated by the School's Office of Regional Activities and Continuing Education.

Recently, in a thorough discussion of these issues by the University Council on Medical Services, the importance of the development of common approaches to continuing education at Yale and statewide was stressed. Further, it was felt that responsiveness to community institutions, consistent with assurance of quality in programs both at the school and at community hospitals, was of overriding importance. The present program, as well as the consideration of new continuing education programs and activities, is directed toward this goal in the expectation that Connecticut soon will witness true coordination of its tremendous educational resources in the furtherance of responsiveness with quality.

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2. In addition, there exist longstanding affiliative ties to the West Haven Veterans' Administration Hospital, the Yale-New Haven Hospital and the Connecticut Mental Health Center
3. An example of the five-year Affiliation Agreement may be obtained upon request to the Office of Regional Activities, Yale School of Medicine

Important Advances In Clinical Medicine

Epitomes of Progress—Allergy

The Scientific Board of the California Medical Association presents the following inventory of items of progress in Allergy. Each item, in the judgment of a panel of knowledgeable physicians, has recently become reasonably firmly established, both as to scientific fact and important clinical significance. The items are presented in simple epitome and an authoritative reference, both to the item itself and to the subject as a whole, is generally given for those who may be unfamiliar with a particular item. The purpose is to assist the busy practitioner, student, research worker or scholar to stay abreast of these items of progress in Allergy which have recently achieved a substantial degree of authoritative acceptance, whether in his own field of special interest or another.

The items of progress listed below were selected by the Advisory Panel to the Section on Allergy of the California Medical Association and the summaries were prepared under its direction.

Occupational Causes of Asthma

Exposure to a number of irritating materials can produce paroxysms of asthma. In many instances, patients have a predisposition toward asthma. However, some materials seem capable of producing bronchial irritation and wheezing in patients who have had no previous respiratory difficulties.

Metal fumes, such as those from nickel and chromium, are well known for their ability to produce asthma and skin eruptions.

Toluene di-isocyanate (TDI) is an ingredient in the manufacture of polyurethanes. Polyurethanes are used in cushioning materials, insulation, varnishes and paint. Exposure to TDI can produce severe asthma. We have been particularly impressed with the frequency of asthma in automobile spray painters exposed to TDI.

Many patients, including some who are hairdressers, note exacerbation of asthmatic symptoms on exposure to hair spray preparations. A recent study has shown acute reversible narrowing of the small airways of healthy persons after exposure to hair spray. Studies were not done in asthmatic persons, but statements from patients would indicate that they may experience similar problems.

We have recently observed a number of meat wrappers with work-related respiratory symptoms. In addition to lacrimation and rhinorrhea, patients experience wheezing, coughing and dyspnea associated with cutting a polyvinyl chloride (PVC) meat wrap with a hot wire. Most, but not all, of the affected workers are cigarette smokers. A few are allergic and have had asthma in the past, but most have noted symptoms only after working with the hot wire cutting method. Antihistamines or bronchodilators (or a combination) and absence from work usually relieve the symptoms. The known chemical breakdown

products of PVC include traces of such potent respiratory tract irritants as phosgene and hydrochloric acid. It is not known whether these materials are responsible for the difficulties.

This listing of occupational associations with asthma is by no means complete. It serves, however, to emphasize to physicians that a careful occupational history should be taken in all patients with respiratory disease, particularly those who have asthma. In most instances, the precise mechanisms of diseases are unknown. Removal of the patient from his work environment is usually successful in eliminating the problem. Distressingly, a few patients continue to have moderate to severe asthma despite this change.

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Unreliability of Cytotoxic Food Testing

The diagnosis of clinically significant food allergy is often difficult. The workup in suspected cases may include, after careful history taking, skin testing, and elimination and provocative diets—as indicated.

Additionally, the cytotoxic food test, an *in vitro* attempt to diagnose food allergy, has been used. The test consists of simultaneous incubation of blood cells (primarily polymorphonuclear leukocytes) with the appropriate antigen and the patient's serum. Positive reactions have been described by changes in the morphology of the leukocytes and red cells and the mobility of the leukocytes in the suspension.

In a recent control study of the cytotoxic food test, 45 patients were divided into three groups:

1. A control group of 20 persons with no history of symptomatic reactions to foods.

2. Fifteen atopic patients with well documented allergic reactions—consisting of urticaria, angioedema or anaphylaxis—to certain foods.

3. Ten persons who had less well defined reactions—such as headache, fatigue, dyspnea, maculopapular rash, nasal congestion or diarrhea—to certain foods.

When successive tests were run on the same patients, the results were not consistent. False positive reactions occurred with equal frequency in all patient groups, the food that provoked symptoms in atopic patients tested positive in only four of 15 with the cytotoxic test. Skin tests were carried out on 13 of the 15 atopic group two patients. In 11 patients, test reactions were positive for the foods provoking symptoms. The cytotoxic food test was not found to be a reliable method for diagnosing atopic reactions to foods. Also, claims that the test correlates with other untoward food reactions could not be corroborated.

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Misuse of Mist Therapy in Status Asthmaticus

Mist tents have often been used in the past for status asthmaticus with little rationale and even to the patients' detriment. Only a small portion of the mist inhaled reaches the lower respiratory tract, most of it being filtered out in the mouth and nasopharynx. Studies using aerosolized technetium from jet and ultrasonic nebulizers show that 70 to 96 percent of the particles are deposited in the upper airways, particularly during nasal inhalation. The usual amount of water that would be deposited in 24 hours in the lower airways of an adult is between 6 and 40 ml. The inspired air is normally fully saturated by the time it reaches the carina so that the benefit of a few milliliters of water in droplet form is remote. It serves basically to hydrate the anterior nares and upper airway. It is doubtful that inhaled mist provides a significant means of liquefying intraluminal mucous plugs.

On the other hand, mist therapy may be detrimental. The density of the fog in the mist tent is such that one cannot adequately visualize a patient in respiratory distress who needs close observation. It may also be very frightening to a young asthmatic patient.

In addition, aerosolized mist has been shown to increase airway resistance in asthmatic patients, particularly with the use of ultrasonically nebulized distilled water.

For this reason we do not recommend mist therapy in a patient with status asthmaticus. The only use for a tent in treating a patient with status asthmaticus is to

supply humidified oxygen when the patient cannot tolerate a face mask or nasal delivery system.

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Hazards of Barbiturates in the Treatment of Asthma, Bronchitis, and Obstructive Pulmonary Disease

Barbiturates are potent inducers of microsomal enzymes. In the liver, these enzymes hydrolyze both corticosteroids and theophylline, resulting in reduced biological activity for both substances. Furthermore, theophylline bioavailability has been shown to be adversely affected when theophylline is combined with phenobarbital in oral tablet form as compared with plain theophylline tablets. Thus, in a patient receiving oral tablets that contain both phenobarbital and theophylline, lower blood levels may be attained more slowly and the duration of these levels will be shorter. The same patient may well experience a lesser corticosteroid effect than the patient who receives theophylline without phenobarbital. These risks must be added to the established hazard of respiratory center depression, which occurs as a result of barbiturate administration.

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Newer Antiasthmatic Agents

The outlook for the pharmacotherapy of asthma has been brightened in the past several years by advances in our understanding of the pharmacokinetics of theophylline. These have led to increased benefit from this medication in the introduction of alternate-day therapy with short-acting corticosteroids to minimize

side effects of these drugs, and the addition of sodium cromolyn by inhalation, to our armamentarium.

The catecholamines act directly on the beta adrenergic receptor which activates adenyl cyclase resulting in increased synthesis of cyclic adenosine monophosphate (CAMP), while theophylline inhibits phosphodiesterase thus decreasing the degradation of intracellular CAMP. These agents act synergistically to increase CAMP levels. Drugs which increase intracellular CAMP cause bronchial relaxation as well as decrease release of mediators of immediate hypersensitivity, histamine and slow reacting substance of anaphylaxis (SRS-A).

New catecholamine bronchodilators have been introduced which stimulate the *B*-2 receptors in the lung to a greater degree than the *B*-1 receptors of the cardiovascular system. The three new compounds which have been studied most extensively are metaproterenol (Alupent® or Metapryn®), terbutaline and salbutamol. Metaproterenol is available in the United States in inhalable and oral forms and appears to be effective but not completely free of cardiovascular and agitation side effects. Terbutaline is currently available in the United States only in an injectable form (Bricanyl®) which offers little advantage to epinephrine except a slightly longer duration of action. Salbutamol (Albuterol®) is not yet available in this country but has been used widely in Europe and Latin America. Its advantages appear to be its long duration of action and potent *B*-2 effects with a minimum of side effects. Further clinical studies comparing these newer bronchodilators are under way to define their relative usefulness.

Another potential approach to pharmacotherapy in asthma is the use of α -adrenergic blockade. Few clinical data are available to date. In addition, the use of the cholinergic inhibitor atropine has also been reexplored since the increased emphasis on the importance of cholinergic stimuli in mediating bronchoconstriction. The prostaglandins E^1 and E^2 are potent bronchodilators and may be useful in the future. Finally, a sodium cromolyn derivative in an oral form (AH 7725) and beclomethasone, a steroid administered topically in low doses by inhalation without evidence of suppression of the hypothalamic-pituitary-adrenal axis, show therapeutic promise.

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Assem ESK, Evans JA, McAllen M: Inhibition of experimental asthma in man by a new drug (AH7725) active when given by mouth. *Br Med J* 1:93, Apr 1974

Current Status of Bronchial Inhalation Challenge in Asthmatics

The rationale for the direct inhalation of suspected allergen extracts by extrinsic asthmatics is the possibility that immunoglobulin E (IgE) antibodies with specificity for the causative allergens may be present in the bronchial mucosa and better reflect the reactivity of the airway in asthma than skin fixed or serum IgE antibodies. The procedure employing inhalant allergen extracts is being used by many research laboratories in the hope that it will prove to be a more direct, accurate and relevant method to show the causative role of specific aeroallergens in asthma when there is a discrepancy between the clinical history and the skin tests. The inhalation test may also result in a more judicious selection of clinically relevant allergens in immunotherapy (hyposensitization), especially in asthmatic patients with multiple positive skin reactions and perennial asthma. It could also be used as a method to evaluate the effects of immunotherapy in asthma, as one study has shown that such therapy could result in changes in bronchial reactivity with or without concomitant clinical improvement of the disease.

Late reactions consisting of bronchospasm and a drop in pulmonary function about 4 to 6 hours following inhalation of allergens have been reported in some patients and make it imperative that such procedure be carried out with proper medical supervision, including provision for immediate admission to hospital.

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Asthmatics and Activity

Asthma is by far the commonest chronic condition noted in children's absence from school. Asthmatics are unique in that running for one to two minutes may elicit bronchodilation and increased performance, whereas if continued for five to twelve minutes bronchial spasm results, either during or within ten

minutes following the exercise. This exercise-induced bronchospasm (EIB) can be prevented by premedication with sympathomimetics or cromolyn sodium.

Breathing exercises (diaphragmatic and chest muscle training) and physical fitness programs (cardiovascular and neuromuscular conditioning) have not been found to provide objective evidence of improved spirometric performance. Subjectively, however, patients often feel that such training has diminished their wheezing.

Certain guidelines emerge for consideration:

- Physical training and physical education within the peer group is endorsed for all but those with severe asthma.

- Use of a bronchodilator is recommended 10 to 15 minutes before activity for those developing significant wheezing on exertion. Occasionally a postexercise dose is also indicated.

- Intermittent short bursts of exertion for 1 to 2 minutes are preferable to steady, prolonged strenuous activity.

- Some competitive sports are possible for asthmatics. The patient and his physician should become acquainted with the rules governing medications for competitors. Athletic rules related to drugs should remain consistent with the needs of these athletes.

- Swimming seems to be the best sport for asthmatics. Golf, bowling, badminton, archery, softball or baseball, ping-pong and even soccer are generally safe, while football, basketball, handball, tennis and running are often too strenuous.

- Asthmatics have many remissions and exacerbations, and personal or supervisory monitoring is advisable. Respiratory infections, pollution, wind, dampness and cold weather tend to adversely interfere with health and performance. Retiring to the sidelines or, better yet, to alternate activity (library, cafeteria, classroom) should be respected.

- Continuing inservice training of school personnel (administrators, teachers, athletic instructors, nurses), appropriate alternative activities, suitable orientation of parents, and interposition of responsible and knowledgeable physicians as consultants are desirable.

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Adverse Reactions to Ampicillin

Since ampicillin was introduced into medical practice in 1961, it has become the most widely

prescribed antibiotic in the United States. Skin reactions have been reported to occur in from 7.3 to 9.5 percent of patient populations. Such reactions are unrelated to age but are slightly more frequent among females. It is important to know whether this high incidence represents an allergic reaction because of the potential danger from administration of this or related penicillin drugs.

The skin reactions are generally two types: a maculopapular one occurring in 68 percent and urticaria-angioedema in 32 percent of affected patients. The maculopapular eruption usually begins 7 to 10 days after initiation of ampicillin and persists 3 to 5 days whether or not treatment is continued. The typical distribution is originally truncal, spreading to the extremities, and most abundant at pressure areas. It may or may not be pruritic and pyrogenic. Two different collaborative groups have been unable to find an immunological basis for the maculopapular reaction. Hypothesized explanations for this skin reaction include the release of bacterial endotoxins, some other manifestation of the underlying disease or the presence of toxic impurities in the drug.

The less common urticarial reaction was shown to be immunologically mediated in about 25 percent of those studied. This finding was based on evidence from skin tests to ampicillin, penicillin G, penicilloyl polylysine (the major determinant) and other minor determinants as well as hemagglutination titres and readministration of the drug. Anaphylactic reactions to ampicillin are no more frequent than those from penicillin G.

A maculopapular eruption during or after ampicillin therapy is not an absolute contraindication either to readministration of ampicillin or another penicillin. An urticarial reaction to ampicillin is more likely to be an allergic reaction. Further administration of any penicillin should be avoided unless penicillin sensitivity can be disproved.

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Rational Use of Oral Theophylline in the Treatment of Chronic Asthma

Theophylline has been used effectively in the clinical management of chronic bronchial asthma for nearly 40 years. Until recently, however, the value of oral theophylline preparations has been controversial

because of variable dose-response relationships and reports of severe and sometimes unpredictable toxicity.

Theophylline is thought to produce bronchodilation by inhibiting the enzyme (phosphodiesterase) responsible for the conversion of cyclic adenosine monophosphate (CAMP) to 5' adenosine monophosphate (AMP). This results in higher levels of CAMP which promotes smooth muscle relaxation and prevents release of chemical mediators from the mast cell and basophil.

Recent pharmacokinetic studies of theophylline have provided information necessary for a more rational approach in the dose scheduling of this drug. Theophylline is metabolized almost entirely in the liver (10 percent is excreted unchanged by the kidney). The rate of metabolism, however, varies considerably between subjects, resulting in a rather broad range of plasma half-lives. Plasma concentrations between 10 and 20 micrograms (*ug*) per ml appear to provide optimal therapeutic effect; but when the concentration exceeds 20 *ug* per ml, the chances of having adverse side effects are increased.

The narrow margin of safety between therapeutic and toxic blood levels, and the intersubject variability of plasma half lives demand individualized dosing schedules if optimal response is to be obtained without adverse effects.

For oral theophylline therapy we suggest using USP aminophylline tablets or one of several theophylline elixir equivalents. A reasonable starting dose would be 4 mg per kg of body weight per dose on a schedule of every six hours. Based on clinical response, adverse effects and plasma theophylline levels, the dose and schedule can be adjusted to achieve optimal clinical response with minimal adverse effects. When necessary a sympathomimetic drug, ephedrine or metaproterenol could be added in appropriate dosage if the patient's asthma is not controlled on theophylline alone.

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Recent Advances in Diagnosis and Treatment of Hymenoptera Hypersensitivity

Anaphylactic reactions from stinging insects of the order Hymenoptera—particularly the honey bee,

hornet, wasp, yellow jacket and fire ant—are a serious medical problem. The diagnosis of Hymenoptera hypersensitivity is based essentially on a clinical history, while skin testing is mainly confirmatory and used to determine the antigen dilution for the initiation of immunotherapy (hyposensitization). The preparations presently approved for both testing and treatment are commercially available whole body extracts (WBE) of insects. Reported clinical results of immunotherapy using these extracts are excellent as data from the American Academy of Allergy Insect Committee Registry have shown that over 95 percent of treated persons had either no reaction or much milder reaction when subsequently resting.

There is conflicting evidence in the literature regarding the correlation of skin test reactivity and the severity of the reactions to stings. There is also considerable overlap in the concentration of WBE which will induce positive skin tests in sensitive and nonsensitive persons. This warrants the search for more sensitive diagnostic tests and more relevant antigens for testing and treatment.

Recent *in vitro* studies using histamine release from basophil leukocytes of hymenoptera sensitive patients using either WBE or pure venom have shown that while skin test reactivity to WBE correlated significantly with cell sensitivity in the most sensitive patients, the *in vitro* test using venom antigens could clearly distinguish sensitive persons from normals and suggests the superiority of venom antigens to WBE in this diagnostic system.

Two isolated case reports also suggest that venom antigens may be superior to WBE in the prophylactic immunotherapy of anaphylactic bee sting reactions.

Fractionation of bee venom in several laboratories strongly suggests that phospholipase A (PLA) is one of the major allergenic components which may not be present in detectable amounts in WBE.

A radioimmunoassay (RAST) appears a promising diagnostic *in vitro* test for the detection of immunoglobulin E (IgE) antibodies to venom and phospholipase A in the sera of hymenoptera sensitive patients.

While these findings are still experimental they may serve as a basis for a more specific approach to the improved diagnosis and treatment of Hymenoptera hypersensitivity. Isolated venoms are not currently available. In the meantime, whole body extract is recommended for therapy.

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Can Food Allergy Cause Asthma?

While inhalant allergy (to pollens, house dust, molds, animal danders, and the like) is generally recognized as a frequent cause of asthma, food allergy of the delayed onset type is not. A substantial number of physicians, including some allergists, doubt the importance or even the existence of this type of food intolerance. However, there is steadily increasing acceptance of its importance, its frequency, its allergic nature and its association with asthma and the tension-fatigue (allergic toxemia) syndrome.

An important reason for failure to recognize delayed onset food allergy is the fact that in such allergy, results of skin tests are usually negative for the offending food or foods. Only in the immediate onset type of food allergy, in which symptoms appear soon after ingestion, are skin tests reliable. This type of food allergy, however, is usually well known to the patient before he comes to the physician, in which case such tests only confirm what is already known. In delayed onset food allergy symptoms do not appear for several hours after ingestion. This, plus the negative reactions to skin tests combine to make recognition of this type of food allergy difficult. Another characteristic is its tendency in some patients to be manifest chiefly in winter, while almost disappearing in summer. This adds further confusion.

A patient may like an offending food and not suspect it at all or believe he tolerates it well except on certain occasions, or in large amounts or in a certain form. An offending food is usually one which is eaten frequently such as milk (including cheese, yogurt, ice cream and sherbet), chocolate (including cola drinks) or corn (including corn sugar, dextrose, corn starch, popcorn and corn oil).

Delayed-onset food allergy and inhalant allergy often coexist. A frequent reason for a less than satisfactory result in treating inhalant allergy is nonrecognition of such a coexistence.

There are no laboratory tests—including the radioimmunoassay test (RAST)—or combination of tests presently available that are reliable in diagnosing delayed onset food allergy. Diagnosis is made by trial elimination diets. Diet directions should always be given to the patient in writing and should be adhered to for a test period of at least three weeks. The trial should be supervised preferably by a physician who has followed the diet himself for a minimum of 24 hours in

order to be aware of the numerous errors that may occur.

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Allergy and School Children

Approximately one in seven school age children has significant respiratory and other allergies. Children spend a large portion of their wakeful day at school. Their performance tends to parallel their health. School personnel often know little about the special needs of allergic students.

Allergic disorders are the commonest health problem noted in the school age population. It is desirable that school authorities, their local medical advisory boards, personal physicians and allergists develop more specific guidelines in behalf of children with allergies. Continuing inservice training is basic.

The following considerations are extremely important to the welfare of allergic school children.

- Physical education and sports. Children with allergies, particularly asthma, need understanding and appropriate encouragement.

- Respective functional roles for school nurses, classroom teachers, physical education instructors and administrators in identifying allergy reactions, dispensing medication, and notifying staff, parents and family physicians.

- Maintenance of allergy environmental control. Recognition and attention to the roles of dust, upholstery, dander, fur, feathers, carpets and pads, chalk, cosmetics, flowers, pollens, mildew, woodwork and metal dusts, printing, odors, chemical disinfectants, sprays, detergents, paints, hydrocarbons, construction and heating and ventilation systems.

- Respect for food allergies. Students have dietary restrictions due to their respiratory, gastrointestinal or skin allergies, and also to "allergic toxemia" (headaches, stomach aches, muscle aches, irritability, tiredness, pallor and the like). Understanding and cooperation are needed to allow these children to have their correct diets.

- Recognition of the vulnerability of allergic children to allergens (ingestants and inhalants), and the role of trigger factors (infections, smoking, emotions, pollutants, exertion, wind, humidity, inclement weather and the like) to cause substantial allergy distress.

- Awareness of the need of allergic children for their medications, and recognition of the frequent side effects from overmedication, particularly with antihistamines and bronchodilators.

It is incumbent upon those of us responsible for the health and welfare of children to properly attend to

their special needs in school in a direct and purposeful way.

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Radiologist Awarded \$660,000 for Termination of Position

In a radiologist's suit against a hospital and an organization which bought the hospital, a California jury awarded him compensatory damages, punitive damages, and damages for loss of profits resulting from the termination of the radiologist's position.

Early in 1968, the radiologist entered into a 10-year contract with the hospital. He agreed to provide up to three days a week radiological coverage. In late 1968, the hospital was sold, and in April, 1970, a nearby physician transferred his large practice from another hospital. The physician immediately started complaining about the lack of full-time radiological coverage and about the quality of work done in the radiology department.

In August, 1970, the physician made a personal attack on the radiologist's competency at a general staff meeting. He attempted to hand out ten examples of alleged "glaring misdiagnoses." When several of the staff objected to this attempt, the staff set up an ad hoc committee to review the physician's charges. The committee requested the staff to have the American College of Radiology conduct a survey to test the physician's complaints.

During the four-month period between the August staff meeting and the survey the physician sent most of his patients to other hospitals for radiological and other laboratory services, and he repeatedly complained to the senior vice president of the organization which owned the hospital about the radiologist's alleged incompetence.

The American College of Radiology performed the survey on January 5, 1971, and the results were favorable to the radiologist. On January 8, 1971, before the results of the survey were published, the organization instructed the hospital administrator to terminate the radiologist for cause. The administrator protested the manner and means of termination. He pointed out that the radiologist's contract contained a clause requiring specification of the nature of a breach and a one-year written notice of termination. The

organization insisted that termination be given without specification of cause and with only 30 days' notice for the radiologist to vacate the hospital.

The radiologist brought suit against the hospital and the organization, and the hospital cross-complained for breach of contract, alleging loss of revenue due to the radiologist's incompetence and the complaining physician's sending his patients elsewhere.

The radiologist contended that the organization denied him an opportunity to defend himself against the complaining physician's charges. He further contended that the organization completely disregarded the medical staff's desire to have the survey determine the validity of the charges, and that the organization maliciously and intentionally disregarded the effect the termination would have on the reputation and mental health of the radiologist.

The hospital and the organization contended that the radiologist's termination was mandated by his grossly inadequate coverage, the number and seriousness of mistakes, and his poor communication with members of the medical staff.

In defense of the evidence presented in court of 12 instances of alleged "glaring misdiagnoses" over a three-year period, the radiologist and his medical experts presented evidence that many of the alleged errors were merely different interpretations of radiological phenomena, and that the frequency of genuine errors was low considering the type of equipment and working conditions provided by the hospital.

The jury awarded the radiologist \$320,000 in compensatory damages against the hospital and the organization, \$40,000 for loss of profits against the hospital and the organization, and \$300,000 in punitive damages against the organization only. The radiologist will also have a special hearing in which he will ask for reasonable attorneys' fees as permitted by the contract.—*Birsner v. Arroyo Grande Community Hospital* (Cal.Super.Ct., San Luis Obispo Co., Docket No. 38917, July 29, 1975)

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Report of the President to the House of Delegates at its Semi-Annual Meeting November 19, 1975

Guy W. Van Syckle, M.D., *Danbury*

My inaugural comments regarding the *U.S.S. Titanic* and the State Society continue to plague me. However, at the half-way mark I am happy to report that the Society is still afloat and as yet we have not had to man the lifeboats.

While most of the news is bad, there is an occasional sprinkle of good news to keep us trying.

Nationally, there is no national health policy. While the stated purpose of easily accessible, quality medical care at reasonable cost is laudable it is not credible. There is no consistent strategy; there is no sharing of goals within the organization; and there is no effective system to allow for reliable assessment of the ongoing diverse programs. Much of the present and proposed legislation suffers the same defects: the absolute power of the Secretary of Health, Education and Welfare; little or no opportunity for public comment or professional evaluation; policy development and implementation conceived in secret and carried out by directives, with impossible time restraints and parameters. That the court and the use of injunctions are our only defense is indictment enough. The profession cannot continue to resort to the courts for remedial action because it is economically impractical. Our federal agencies continue with rule making abuses in the field of health. The agencies continue to govern by directives which are often in contradiction to the language of the law, and, in certain instances, ignore the specific mandate of the statutes.

Although no proposed rules had been issued previously, HEW has gone ahead and published final rules for a state that is seeking a rate-setting grant under the National Health Planning and Resources Development Act. More recently, on October 17th, the proposed rules for Health Systems Agencies under the Health Planning Law were published and only thirty days were allowed in which to comment. I am still lobbying for the establishment of a separate Department of Health as our only means to preserve our pluralistic health care system. Unless we take health out of HEW we will never be able to answer Alice's perennial question, "Who's in charge here?"

Locally, the formation of health systems agencies goes on in the five designated areas in the state. My concern persists regarding the potential for abuse and risk in combining planning, resource development, and regulatory function in one agency, which is not publicly accountable. To date there appears to be little

or no incentive to integrate the HSAs into a unified state health plan. As expected, we doctors have been largely excluded from the scene, because implicit in the new planning bill, Public Law 93-641, is the transfer of control from the health industry and the providers to the consumers. Also, there is the additional threat that if all goals and priorities are to be accomplished, it follows inevitably that there must be total governmental control of the industry.

There have been two recent meetings focused on the beginnings of the HSAs—one in Washington and one in Hartford. In Washington, the primary problem revolved around funding, as was expected. A matter of key importance will be the designation of the ten centers for health planning authorities by the planning bill, which will undoubtedly be extremely influential in the early implementation of the bill. We can expect to learn of these designations by the end of the year. While there probably will not be any public HSAs in Connecticut, in other parts of the country there is evidence to suggest increasing politicalization in the implementation of Public Law 93-641. Predictably, the HSAs will be involved with many jurisdictional disputes with other established agencies and programs, not only over federal funding but also in the areas of planning, services, needs and personnel. Locally, as expressed by the Commissioner of Health, the State and Governor plan on being influential in the determination of just who will be awarded HSA designations in Connecticut. Various criteria of acceptability have been outlined by the Commissioner and the grading of the various applicants is implied in the Governor's ultimate report to HEW.

There is no difference of opinion within the Society regarding the need for continuing medical education. There is, however, divergent opinion regarding the need for this to be made compulsory, and, in particular, as a criteria for membership in county and state medical societies. Accepting the legitimate criticisms that can be made regarding this concept, it is an idea whose time has come. Numerous specialty organizations are already implementing such requirements for recertification. State legislatures in different parts of the nation have already passed statutes requiring this as a necessity for continued licensure. I am sure that either under the impetus of proposed legislative changes in malpractice or physician care and discipline, such a requirement will be mandated as a condi-

tion of practicing our profession in Connecticut.

Let us respond by insisting that the proposals be rational and that they offer hope for improving medical care rather than merely setting arbitrary parameters for the evaluation of post-graduate education. Since the most efficient learning has always occurred at the problem interface—in this case the patient and his illness—learning should take place at the local level. It should also be carried out locally or the cost will be prohibitive. This would also allow the learning to be continuous, patient-oriented and suited to the individual physician's needs. A program such as this would not result in any disruption of practice patterns and would recognize that our educational requirements vary from physician to physician and community to community.

The malpractice problem in the state still deserves the term of crisis. While we have been promised available coverage until 1981, continuation of this year's average premium raise of 40% essentially doubles the premium every two years. Additional bad news indicates that even the most optimistic predictions suggest that no matter what steps will be taken in the next several years, there will continue to be a rise in premiums because of the present backlog of cases. The Society has opted to attempt to improve and reform the present tort liability system rather than to institute a new program such as binding arbitration and/or a no-fault system. The major factor in our decision was that the present indications suggest that the implementation of any other system would result in a significant increase in the cost of malpractice litigation. Many otherwise knowledgeable people still do not comprehend that our present liability system is intended as a means to protect the physician's assets and not to compensate a patient for injury. Abuse of this system, particularly by the courts, is one of the major causes in the present no-win state of affairs. I also remain convinced that unless we ultimately control the actual number of injuries, any proposed system, no matter how complex or far reaching, will ultimately fail.

I have been encouraged to date by the recognition of many groups that this is not a problem restricted to physicians but is also of vital concern to many others participating in the wide ranging areas of health care. To date, a spirit of cooperation persists with the total absence of a certain ugliness and meanness of spirit that has characterized actions in this problem area in nearby states. Hopefully, the final product will represent the best quality of public action; fair and just to everyone, acceptable to everyone, and not totally satisfactory to anyone.

Increasing concern has been expressed both within and without the profession regarding those physicians who, because of physical or mental illness, may repre-

sent a threat to their patients and the public at large. These declining or impaired skills may be the result of such factors as aging, physical infirmities, mental illness, drug abuse or alcoholism.

The matter has been brought into focus in Connecticut primarily through the action of the Commissioner of Health by way of meetings and public pronouncements. More recently we have been made aware of his intent to submit new legislation in the field of Physician Care and Discipline to replace the present statutes.

At the present time, I am unconvinced that any true crisis exists or that there is need for specific action to revoke the presently existing statutes. To my knowledge there is no data to support the contention that there has been a significant increase in the instances of impaired judgment or physician incompetence due to drugs, alcoholism, or mental illness.

Regarding the charge that our disciplinary agencies are not upholding proper standards of care, I believe that hospital staffs, on the contrary, have improved their disciplinary procedures. Tissue, audit and other professional review committees certainly are valid evidence of continued and productive activity. The PSRO organizations, the data banks of CMI, and Utilization Review Committees can only further improve the situation by providing objective data for the evaluation of complaints.

Complaints of failure to police ourselves continue locally and nationally. The public and the press do not understand—but must be made to understand—that the Medical Society does not have the quasi-judicial function of the Bar Association. Some professionals, both within the state and nationally, believe that medical societies should be given the necessary legal authority, the judicial privilege and the necessary legislative implementation to act. For myself, I believe that it would be inappropriate for the state to delegate police and other functions to any private organization that was not elected nor in any way publicly accountable.

The present applicable sections of the statutes are not obsolete and this judgment is supported not only by legal opinions but also by those of others well versed in this problem area. The basic difficulties in investigation and enforcement of these statutes are the results of chronic understaffing and underfunding of the state agencies concerned. Criticisms arising from the attorney general's office are rather typical. All enforcement agencies complain constantly of legal restrictions which make it difficult for them to prosecute and convict. Too often it appears that the emphasis is being placed on punishing physicians and, only incidentally, on protecting the public.

Another major problem appears to rest on the phrase "on receipt of a written charge, verified by affidavit." This may well be a significant deterrent, but as a

true believer in due process, the Society should fight, literally tooth and nail, against any legislation that would make it easier to discipline a physician by watering down the basis on which he could be called to account by his peers or by the Commissioner of Health. The problem is not with the statutes but with the reality of how difficult it is to compel, even legally, people, organizations and hospitals, to file such charges in writing and be obliged to appear before the Examining Board hearings to testify in support of the charges face-to-face with the accused. Fear of law suits, which often borders on paranoia, is seen not only with private physicians but also with hospitals, staffs and administrators. As a practical matter, this is an unfounded fear but we probably do need some form of immunity granted to those who provide testimony, data and records in actions of this kind. Certainly appropriate agencies, such as hospitals and medical societies, should be required to file with the Health Department cases of documented physician incompetence.

In reference to the "sick doctor" legislation, review of most models raises serious doubts regarding their constitutionality, particularly in the area of civil rights and loss of personal freedom.

Nothing will be gained by splitting off the suspension or revocation of the licensure section from the present licensing board. Lay participation in the determination of competence is nothing more than tokenism to the consumer movement in the country and the evaluation process will end up being politicized. A medical board consisting of physicians is still the organization best able to know the professional and moral standards required of practitioners.

I would urge, also, that the Society undertake promptly the task of reviewing and seeking to improve and standardize the methods of handling complaints regarding member physicians' activities which are being registered with, or referred to, the local and county medical organizations throughout the state. It does appear that the component county associations vary considerably in the way in which they deal with such complaints, and, in my opinion, a strong effort should be made by the Society, in cooperation with county leadership, to promote greater uniformity of procedure among the eight associations to the end that we can claim—with convincing proof—that we have an effective and responsible statewide peer review system

within our own organizations, fair and impartial to patients and physicians alike.

The thoughts I have just expressed concerning physician care and discipline are in no sense those of an armchair philosopher. In the weeks that have passed since I attended the meeting called by Commissioner Lloyd last September 10, I have consulted—by letter, telephone and in person—with several dozen members of the Society who, through on-the-job service at state and county levels, have acquired considerable knowledge and expertise in peer review activities. In addition, I have discussed at length the strengths and weaknesses of our existing disciplinary mechanisms—both public and private—with members of the Connecticut Medical Examining Board, the chairmen of several key committees within the Society and with Staff.

Having had the benefit of the wise counsel of these many colleagues, at the request of the Council I undertook to put together a report on the subject of physician care and discipline, with conclusions and recommendations, which I am submitting to the House today as an appendix to, but an integral part of this President's report. I apologize for its considerable length and for the fact that you are receiving it only now. However, in mitigation, I offer the facts that it took many hours to draft and my belief that it is urgent for the Society to establish a position on this rather controversial subject well before the General Assembly convenes next January.

For the latter reason, especially, I *recommend that the House act to approve the appended report, conclusions and recommendations.*

In conclusion: At a little past the halfway mark of my term of office, I am encouraged—if not as yet entirely optimistic—as to the future. In my travels about the state this Fall, I have detected very little apathy being manifested at the county association meetings. Indeed, there appears to be widespread and sincere interest in medical affairs which transcends the everyday practice of medicine with its inevitable parochialism. I sense that many of us now, for perhaps the first time, are trying to judge the present and influence the future. Regardless of the magnitude of our ongoing problems, if we can continue to maximize the public benefit and minimize physician discontent, the final result cannot turn out to be all bad.

REPORT ON PHYSICIAN CARE AND DISCIPLINE

(Appendix to the Report of the President)

Foreword

Prompted by discussions held at a September 10 meeting on physician care and discipline called by the Commissioner of Health, and notice given to the participants thereof of plans to submit to the 1976 session of the General Assembly a bill which would replace the present Connecticut Medical Examining Board with a "commission on physician discipline," a careful study has been made of some of the premises advanced by the proponents of such statutory replacement in support thereof. It is not contended that any or all of the following commentaries are definitive. Collectively, however, they suggest strongly that before any legislative action is taken to drastically revise or replace the state's existing physician disciplinary mechanisms, much more hard and convincing data that purport to demonstrate major shortcomings in the existing mechanisms must be produced. The commentaries follow:

Premise No. 1

"THE AMERICAN PEOPLE HAVE LOST CONFIDENCE IN THEIR DOCTORS."

Almost daily a spokesman for a government bureau, a career health planner or a politician advances this "lost confidence" premise as an excuse for seeking to impose ever more stringent controls on physicians in nearly all areas of medical practice-professional judgment, the prescribing of drugs, education and post-graduate training, charges for services rendered, etc.

We find this premise to be faulty on the grounds that it is entirely unsupported by the results of independent public opinion polls which, year after year, indicate that Doctors of Medicine enjoy the confidence and esteem of the American people at levels that should be the envy of those engaged in other callings. Since millions and millions of patient-physician contacts are made each year, it must be expected that a certain number of complaints will be voiced about one or another of the factors involved in the providing of medical services. Some of these complaints will be found valid and some will not, and it is the duty of the medical profession to subject them all to impartial peer review. However, it has been the experience of the Connecticut State Medical Society that the number of complaints received for review, whether valid or not, is extremely small in relation to the total number of services rendered by the physicians of our state.

Premise No. 2

"HOSPITALS AND MEDICAL STAFFS ARE NOT INSISTING ON PROPER STANDARDS OF CARE."

Contrary to the implications of this premise, the acceptable standards for the quality of medical and surgical care rendered in hospital settings are constantly being upgraded by medical staffs. Prompted by the Joint Commission on the Accreditation of Hospitals and regulations imposed by the Medicare and Medicaid programs, the current activities of tissue, surgical audit and utilization review committees in our community hospitals attest to the fact that ongoing evaluation of the professional performance of physicians having staff privileges is being given high priority. Many hospitals now prescribe participation in continuing medical education as a contingency of continuing staff privileges. Hospital administrations have become increasingly aware that they can be held responsible for the competence of staff members and are insisting on adherence to standards. The developing Professional Standards Review Organizations, the expertise to be contributed by the recently-formed Connecticut Medical Institute and the expanded role to be played by hospital Utilization Review Committees when the PSROs become fully operational in 1976 all give promise of progressively upgrading the methods by which the high quality of medical care can be assured and the performance of practitioners measured objectively against established standards.

Premise No. 3

"MOST MALPRACTICE ACTIONS ARE BROUGHT AGAINST INCOMPETENT PHYSICIANS."

This premise is advanced in support of the contention that a more stringent disciplinary apparatus must be created to take the incompetent physician out of circulation. It is conceded that relative degrees of professional incompetency may exist among a small segment of Connecticut physicians who are delivering patient care, and it is agreed that the existing disciplinary apparatus should be utilized to the fullest ("on receipt of written charge, verified by affidavit") to remove them from practice until they can demonstrate that their incompetency has been remedied. However, all available data indicate that it is *not* the incompetent physician but the one of greatest competence and expertise that is most likely to be charged with malpractice. Hence, it is clear that tight physician discipline, while worthy of exercise with no holds barred, will do little to solve the problems now being encountered in the field of professional liability and liability insurance because the record shows that incompetence is not a major contributing factor.

Premise No. 4

“WE ALL KNOW THAT THERE ARE DOCTORS PRACTICING IN CONNECTICUT TODAY WHOSE LICENSES OUGHT TO BE SUSPENDED OR REVOKED.”

Cited in support of this premise is the fact that, in a ten year period beginning in 1965, only eighteen cases have been referred to the Connecticut Medical Examining Board by the Commissioner of Health, and that, of these, only about half have resulted in suspension or revocation of licensure. The others resulted in reprimand. The implication here is that nine suspensions or revocations in a ten year period are not nearly enough; that there should probably have been many more. In the absence of convincing proof that either the premise or the implication is valid we cannot accept either as indicating that the Medical Examining Board has been remiss in exercising its disciplinary authority or that the existing statutes are faulty.

It would be absurd for anyone to contend that there are no physicians in Connecticut who, for one probable cause or another, could not be removed from the practice scene—temporarily or permanently—if only someone would prefer charges against him/her, in writing, with the Commissioner of Health. However, it would be equally absurd to espouse a theory that meeting a quota of (say) 10 or 20 suspensions/revocations a year is needed in order to rid the ranks of the state’s medical profession of incompetents and undesirables.

Whether there are many or few doctors among us who should have their licenses lifted, every last one of them stands to be taken out of circulation if only those who “know” *who* they are will come forward and apprise the Commissioner of Health of *what* they “know” and then stand ready to appear at the Medical Examining Board hearing to face the accused and testify against him/her. Vague generalities, anonymous complaints and innuendos must never be given recognition when a physician’s legal right to pursue his profession is at stake.

Premise No. 5

“THE PRESENT STATUTES COVERING MEDICAL DISCIPLINE ARE OBSOLETE, INEFFECTIVE AND IMPOSSIBLE TO ENFORCE.”

This premise is being advanced as a reason not only for “putting more teeth” in the present statutes but also for replacing the Medical Examining Board as the agency responsible for exercising statutory disciplinary powers over physicians. Some of our colleagues seem resigned to accepting this premise without much question, although many of them are frank to admit that they are not really familiar with the provisions of Sections 20-45 and 20-46 of the General Statutes of Connecticut.

A careful comparison between the subject Connecticut statutes and the new “sick doctor” laws being enacted in several other states and the “model” bill drafted by the American Medical Association suggests that the latter could well have been based on the provisions of the same Sections 20-45 and 20-46 that are being labelled “obsolete” and “ineffective” by those who favor drastic change. We are advised by two different legal counsels that the present Connecticut statutes are “quite comprehensive and adequate” and that they are specific enough, and yet general enough, to authorize suspension or revocation of licensure for any “illegal, incompetent or habitually negligent conduct” in the practice of medicine, whatever the cause.

The comparison also reveals that while many of the “new” laws being enacted across the nation make no mention of strict adherence to *due process* as a requirement for the conduct of hearings by the disciplinary authority, the Connecticut statutes are most emphatic on this most important point; i.e., that a hearing shall be conducted by the Medical Examining Board only “on receipt of a written charge, verified by affidavit, filed by the Commissioner of Health”; that the physician may “produce witnesses and evidence and may question witnesses”; and so on.

It is recognized that the person or persons who file charges against a physician with the Commissioner of Health may be liable for civil suit on a variety of counts and that there is no provision in the present statutes which grants immunity to the accuser. Therefore, it would certainly seem in order for the Society to support a subject amendment to Section 20-46, such as: “Any person who provides information in good faith under this Section shall not be subject to suit for civil damages as a result thereof.”

The Society might also consider supporting amendments the purpose of which would be to require hospitals and medical organizations to report to the Commissioner of Health instances of documented “illegal, incompetent or habitually negligent conduct” on the part of a physician, provided that such amendments give full protection to all constitutional and legal rights of the physician concerned.

Premise No. 6

“THE MEDICAL EXAMINING BOARD, WHICH MAKES RECOMMENDATIONS FOR LICENSING DOCTORS OF MEDICINE, IS NOT AN APPROPRIATE AGENCY TO MAKE RECOMMENDATIONS FOR SUSPENSION OR REVOCATION OF LICENSURE.”

Although this premise has been advanced by persons favoring the establishment of a special “commission on physician discipline,” no convincing arguments in support of such premise have as yet made their appear-

ance. It is a matter of record that the Connecticut Medical Examining Board has always been meticulous in its screening of applications for licensure, not only in the matter of professional qualifications and examination grades but also in the matter of letters of reference as to personal integrity and moral character. In similar fashion, the Examining Board has discharged faithfully and well its responsibility to conduct fair hearings, characterized by due process, on cases referred to it by the Commissioner of Health and has made recommendations for discipline in strict accordance with its findings. In the absence of convincing arguments to the contrary, we must reject the premise that the Medical Examining Board should not continue as the State's licensing and disciplinary agency for Doctors of Medicine.

Premise No. 7

"TO DEAL WITH COMPLAINTS RECEIVED BY THE STATE HEALTH DEPARTMENT A NEW DISCIPLINARY COMMISSION SHOULD BE ESTABLISHED."

This premise is based on a statement by the Commissioner of Health that his Department "averages one or two calls per week complaining of physicians' competence, attitude, conduct or fees" and that "support and aid from county and state medical societies (in dealing with these complaints) has been disappointing." Using these statements as a springboard, the Commissioner concludes that the present statutes (Sections 20-45 and 20-46) should be replaced by new statutes which would establish a "commission on physician discipline." In addition to the Commissioner of Health, as non-voting chairman, the commission would be composed of physicians selected from a variety of sources (the State Medical School, the president of CSMS, appointees of the Governor's choosing, CSMS nominees appointed by the Governor, a member of the Medical Examining Board), two non-physicians representing the "medical consumer" and an attorney.

While it is not practical to present in this report an item-by-item evaluation of the draft bill prepared by Health Department staff at the Commissioner's direction, several key features are recognized as follows: (1) The commission would have ultimate disciplinary authority over Doctors of Medicine, whether a complaint involved professional competence, fees, drug addiction, alcoholism, seeming lack of interest in a patient, moral turpitude, rudeness of manner, medical ethics, etc.—in other words, *any* complaint about anything; (2) While the opinion of county-state medical organizations would be sought on all complaints, the commission "shall vote to accept or reject the recommendation of the county/state society by a simple majority"; (3) No stipulation is made that complaints

must be accompanied by a written charge, verified by affidavit (as is stipulated in present Section 20-46 of the General Statutes).

Beyond the fact that the creation of such a commission would, in effect, usurp the traditional peer review function of medical organizations in investigating complaints of a non-statutory nature, that its creation would serve to equate, illogically, complaints about a physician's personal characteristics or manner with complaints charging moral turpitude, alcoholism and the like, and that no convincing case has been made that the Medical Examining Board is not serving the public interest well in suspending or revoking the licenses of physicians found, after due process, to be endangering the public health or welfare, the Society makes criticisms of the Health Department's subject draft bill as follows: (1) There is no data available which supports a claim that there is a "crisis" in the field of medical discipline in Connecticut or indicates that such drastic measures as the proposed "commission on physician discipline" are needed at this time. (2) Professional peer review is the province of professional peers. Peer review of physicians' professional performance and conduct should continue to be made by physicians. The inclusion of attorneys and other non-physicians on a board or commission administering physician discipline is as out of order as would be physicians serving on disciplinary committees of the Bar or representatives of management serving on the boards of labor unions.

Conclusions

Based on the foregoing commentaries, several general conclusions are drawn as follows:

1. No "crisis" has been demonstrated to exist in the field of physician care and discipline in Connecticut.
2. The Connecticut Medical Examining Board, in addition to its licensing function, is well qualified to make recommendations for suspension or revocation of licensure and to make recommendations for such lesser forms of physician discipline as may be indicated by its findings in each individual case.
3. Sections 20-45 and 20-46 of the General Statutes of Connecticut have stood the test of time and appear to be entirely adequate with respect to the disciplinary powers vested in the Connecticut Medical Examining Board and the procedures prescribed for the conduct of disciplinary hearings. A provision to grant statutory immunity from civil suit to persons filing charges and testifying against physicians "in good faith" might overcome the reluctance of some persons to file charges and testify. This type of immunity might also encourage hospitals and medical organizations to report to the Commissioner of

Health instances of documented “illegal, incompetent and habitually negligent conduct” on the part of physicians within their respective jurisdictions.

4. Peer review of physicians’ professional performance and conduct should continue to be made by physician peers exclusively, provided that such review is impartial and fully protective of the rights of both physicians and the public.
5. The proposed addition of non-physicians to a physician disciplinary agency is contrary to the fundamental concept of peer review in medicine as well as in other learned professions. When a physician is being tried in a court of law for an alleged civil or criminal offense, it is appropriate that he be judged, as all others, by *citizen* peers. When he is accused of violations of professional performance or conduct, such as are stipulated in Section 20-45 of the General Statutes, it is fitting and proper that he should be judged only by *professional* peers.
6. Physician incompetence, *per se*, does not contribute significantly to the problems currently being encountered in the field of malpractice claims and professional liability insurance coverage. It is unacceptable as an argument in favor of drastically revising or replacing existing Sections 20-45 and 20-46 of the General Statutes.
7. It is appropriate that the Society, in cooperation with county leadership, undertake a critical review of the procedures followed by the component county medical associations in handling complaints against physicians received by, or referred to, the associations for investigation and adjudication. The purpose of such joint review should be to promote uniformity of procedure among the eight associations to the end that organized medicine in Connecticut can claim, with justification, to provide an effective and responsible statewide peer review system. It would also seem desirable for the Society, rather than the Department of Health, to be identified in the public mind as the primary agency in Connecticut with which complaints against physicians should be filed. The Society, functioning as a clearing house and referring agency, could acknowledge receipt of the complaint to the complainant and to the physician concerned, note the reviewing organization (County Medical Association, Department of Health, etc.) to which the complaint had been referred for investigation and adjudication, and request from the reviewing organization a report on the findings and disposition of each case.

Recommendations

1. That the Connecticut State Medical Society pledge cooperation and counsel to, and invite cooperation

and counsel from, state agencies and committees of the General Assembly which may contemplate making changes in the statutes covering the practice of medicine and/or the issuance, suspension or revocation of licenses to practice medicine in Connecticut, to the end that the public will be protected against any and all physicians who are found guilty of exhibiting “illegal, incompetent or or habitually negligent conduct” in their rendering of medical services to patients.

2. That the Connecticut State Medical Society strongly support the continuance of the Connecticut Medical Examining Board as the agency authorized by statute to discipline physicians for proven deficiencies in professional performance and conduct in the general and specific areas stipulated by Section 20-45 of the General Statutes of Connecticut and that all necessary staff and funding be provided to that agency.
3. That the Connecticut State Medical Society support the enactment of an amendment to Section 20-46 of the General Statutes which would grant immunity from civil suit to persons filing charges with the Commissioner of Health and testifying against physicians at hearings on the charges held by the Medical Examining Board when such charges and testimony are made and given “in good faith.”
4. That the Connecticut State Medical Society strongly support continuance of the provisions for due process in disciplinary hearings on complaints against physicians that presently obtain in Section 20-46 of the General Statutes of Connecticut, and strongly oppose the enactment of any amendment or new statutes which would in any way deprive either the accused physician or his accuser(s) of such due process.
5. That the Connecticut State Medical Society strongly support continuance of the concept that physician peer review should be made by physician peers exclusively, and voice strong opposition to the inclusion of non-physicians as members of a physician peer review body.
6. That the House of Delegates direct the Council to appoint an ad hoc committee to undertake forthwith: (1) A critical review, in cooperation with the county associations’ leadership, of the procedures now being followed by the several component associations in their handling of complaints against physicians that are registered with, or referred to, them for investigation and adjudication, for the purpose of promoting uniformity of such procedures throughout organized medicine’s existing statewide system of peer review, and (2) develop a plan by which the Society could achieve public

identity and official status as the primary agency in Connecticut with which complaints against physicians should be filed (as outlined in Conclusion No. 7 of this report). Further, that the Council be directed to report on these undertakings, with recommendations, to the House of Delegates at its next meeting.

7. That this report of the President, with its conclusions and recommendations, constitute the guiding

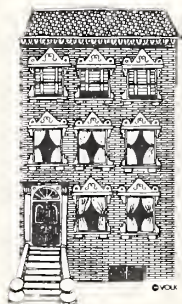
policy of the Connecticut State Medical Society with respect to the subject of physician care and discipline in Connecticut until such time as it may be amended, rescinded or replaced by the House of Delegates.

Approved by CSMS House of Delegates
Semi-Annual Meeting, Nov. 19, 1975

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Psychiatry's Own Identity Crisis

Myths in Mental Health Planning

Hans H. Neumann, M.D.

As mental illness moves more into focus as one of the major public health problems, it becomes evident that the field of mental health planning is incongruously studded with myths and fallacies.

The great illusion runs something like this: Psychoses can be prevented by talking things over early, at a nearby friendly community mental health center. If this opportunity was missed, the psychoses can still be cured. Period. After discharge from a hospital, what ex-patients need is a mental health center nearby, and re-socialization. Their families and fellow citizens will then accept them with open arms and they will live happily ever after "in the community."

Myth No. 1, widespread among the lay public as well as among mental health workers and rarely contradicted by psychiatrists who know better: that a psychosis is an escalation of an untreated neurosis or situational problem, and that community mental health centers should be places where people come with their life-troubles for sessions with therapists which will prevent psychoses. This ignores the reality of mental illness: that, as yet, we do not sufficiently understand psychoses to design programs for their prevention.

Myth No. 2, still common and widespread among mental health workers, is that schizophrenia is eminently a reaction to socio-psychological influences.

The incidence of schizophrenia per unit of population has remained stable for the last hundred years, as evidenced from records in New England. Statistics show that the incidence of psychoses (with the exception of those caused by infections, such as syphilis) was much the same a hundred years ago as it is today. Moreover, schizophrenia occurs in primitive societies as in the most advanced, in socially settled as in stressful environments and at remarkably unchanging rates. There is no evidence that the schizophrenic disorders are preventable (or, for that matter, successfully treatable) by psychotherapy of any duration.

Myth No. 3: From fallacious over-projections of the falling number of inpatients in state hospitals in the 1960s, it was concluded that there is no further need for the existence of these institutions. Chemotherapy had, indeed, greatly shortened for many the length of stay in these hospitals. Unfortunately the psychotropics do not cure, and once discharged there is no way of forcing patients to take their medication with some

regularity. Many of the discharged chronic schizophrenics never get to aftercare clinics, and of those who do, many more drop out.

The routine chain of events is that after some incidents, distressing for the patient, his family, and the community, the patient ends up at the door of the state hospital again—the well known revolving door.

Myth No. 4: Hospitalization is disastrous for the psychotic: Do anything to keep him away from the destructive effect of institutionalization. In fact, a hostile family, disintegrating while being forced to harbor a psychotic, or some shabby rooming house that exploits him, are the unfortunate alternatives offered for hospitalization.

The "warehousing" of psychotic patients in state hospitals is a pejorative phrase that refers to perhaps the most appropriate and relatively agreeable residential living condition for a large segment of psychotics, compared to the common alternatives of a resentful family or a run-down sleazy hotel.

Myth No. 5: The releasing of mental patients from large institutions and placing them in community facilities has proven highly successful in Britain.

The facts are that this concept came, indeed, from England and was planted in the U.S. in the early 1960s. Since then, however, the British experts who pioneered these programs have drastically reviewed their theories. They now contend that no patient should be released unless there are adequate residence facilities in the community. Yet the building of such half-way houses (hostels) has created strong opposition and resentment in the communities and has virtually come to a halt. British experts now also feel that many patients should never be released.

Myth No. 6: The psychiatric units of local general hospitals should serve as substitutes and alternatives for the mental hospital. General hospitals no doubt provide useful services for psychiatric emergencies. Yet, without the backing of the state hospitals, they would rapidly become disrupted by an accumulation of chronic, disturbed schizophrenics.

By now we realize that no matter how successful modern chemotherapy is, many psychotics are not restored to a state of health sufficiently stable to enable them to function outside of an institution, and that the general hospital is not the right environment for them either.

Myth No. 7: That half-way houses and nursing homes for those discharged from state hospitals are

DR. HANS H. NEUMANN, Director, Preventive Medicine, City of New Haven.

superior to state institutions. In fact, investigations have shown that too many of them degenerate into pig pens, inferior to the worst state hospitals where, at least, meals are served, medicine is provided, and some supervision exists.

The wave of releases of psychotics from state hospitals in some states has been followed by shocking reports of the plight of such patients roaming the streets or victimized and exploited in unsuitable welfare hotels. In New York City alone, an estimated 25,000 severely mentally disturbed persons live in such substandard quarters.

The experience garnered in England prevails here as well: when the state attempts to build half-way houses or residences for the discharged mental patients "in the community," it is the community that puts up the greatest resistance and bitterest fight.

Myth No. 8: The new policy of disbanding the state hospitals brings the patients back to the more normal environment of family and friends.

The facts are that when families are forced to be involved, they bear the heaviest burden under the policy of managing chronic schizophrenics outside hospitals. They have the burden of coaxing the disturbed family member into pill taking. Maintaining a psychotic relative at home often means the loss of earning capacity for one family member who has to stay home to look after the patient. Another important effect is on children, particularly if the mother or a sibling is the partially-controlled psychotic on medication. The results on children can be devastating.

Community care cannot be a substitute for hospitalization if staying at home disrupts a family and if the family deeply resents the presence of a psychotic at home. A spokesman for the Federation of Parents Organizations for the New York State Mental Institutions reported that the discharge of the patients was a "traumatic nightmare that they (the family) cannot cope with."

Myth No. 9: Our biggest concern should be the protection of the civil liberties of all mentally ill patients.

The fact is that the public needs protection as well. In the last two years, in California alone, some seventy murders have been committed by patients released from mental hospitals. Many of these were mass murders. One of the accused who murdered eight women, had previously murdered his grandparents, and had been held in a state hospital and released as being of no danger to society. He was thus enabled to embark freely on a career of mass murder. This is by no means an isolated case. The act purporting to phase out the state hospitals in California is now under severe criticism for turning into the commu-

nity patients unable to care for themselves and who are also a menace to society.

Myth No. 10: The role of the community mental health center is to deal not only with the treatment of psychotic disorders but also with the neurotic as well as with those straddled by problems of every day living.

The first is traditionally an obligation of the state and the community since the care required is usually out of financial reach of families because of the protracted nature of these disorders. After discharge from state hospitals, community mental health centers can properly deal with those who may be induced, or who are motivated enough, to keep up attendance. Unfortunately, the common diagnoses at discharge from the hospitals—schizophrenia, manic-depressive disorders, alcoholism, drug addiction and senile dementias—are conditions not very conducive to motivation to attend community clinics.

Other problems frequently arise with the community mental health centers' split personality and as a result of their second concern: the problems of day-to-day living of the non-psychotic community members. In this field, services offered at public expense are so poorly defined in their method, scope, and time requirements per patient as to make the operation of such public clinics for adults highly controversial.

The profusion of techniques, the lack of control of effectiveness, the undefinable time requirement per case, the conflicting views regarding the qualifications required for the counsellors—professional, semi-professional or barely trained lay-community members (there is hardly anybody who does not feel competent to counsel others in their problems)—these lack of standards make this part of a public health service wide open to drift and disorientation.

As a consequence, surveys have shown that many community mental health centers have irreconcilable internal conflicts. Over-optimistic reliance on poorly trained psychiatric community workers has created an atmosphere of friction and hostility and has made a battleground out of mental health centers. This distorts public notions of what psychiatry, as a presumed branch of medicine, is all about, and suggests that it does not take much training to master and apply it.

Myth No. 11: While one cannot be critical of some of the excellent existing child guidance services, there are some myths taking root in this field, too.

If according to estimates by "experts," fifty percent of all children need psychotherapy, then perhaps we have to re-examine our standards of normalcy and the range of permissible variations in a child's personality. This estimate of fifty percent was given regarding Westchester County (New York) children. Similar estimates come from other areas, from Hawaii for

main purpose of drug information for the patient is to get his cooperation in following a drug regimen.

Preparation and distribution of patient drug information

We would hope to amass information from physicians, medical societies, the pharmaceutical industry and centers of medical learning. The ultimate responsibility for uniform labeling must, however, rest with the Food and Drug Administration. There is nothing wrong with this agency saying, "this information is generally agreed upon and therefore it should be used," as long as our process for getting the information is sound.

Distribution of the information is a problem. In great measure it would depend on the medication in question. For example, in the case of an injectable long-acting progesterone, we would think it mandatory to issue two separate leaflets—a short one for the patient to read before getting the first shot and a long one to take home in order to make a decision about continuing therapy. In this case, the information might be put directly on the package and not removable at all. But for a medication like an antihistamine this information might be issued separately, thus giving the physician the option of distribution. This could preserve the placebo use, etc.

It is in the distribution of patient information that the pharmacist may get involved. As professionals and members of the health-care team and as a most important source of drug information to patients, pharmacists should be responsible for keeping medical and drug records on patients. It is also logical that they should distribute drug information to them.

Realistic problems must be considered

We have to expect that the introduction of an information device will also create new problems. First, how can we communicate complex and sophisticated information to people of widely divergent socioeconomic and ethnic groups? Second, what will we say? And third, how can we counteract the negative attitude of many physicians toward any outside influence or input? Hopefully the medical profession will respond by anticipating the problems and helping to solve them. Assuming we can also solve the difficulty of communicating information to diverse groups throughout the United States, our remaining task will be the inclusion of appropriate material.

What information is appropriate?

In my opinion, technical, chemical and such types of material should not be included. And there is

no point in the routine listing of side effects like nausea and vomiting which seem to apply to practically all drugs, unless it is common with the drug. However, serious side effects should be listed, as should information about a medication that is potentially risky for other reasons.

Other pertinent information might consist of drug interactions, the need for laboratory follow-up, and special storage requirements. What we want to include is information that will help increase patient compliance with the therapy.

Positive aspects of patient drug information

Labeling medication for the patient would accomplish a number of good things: the patient could be on the lookout for possible serious side effects; his compliance would increase through greater understanding; the physician would be a better source of information since he would be freer to use his time more effectively; other members of the health-care team would benefit through patient understanding and cooperation; and, finally, the physician-patient relationship would probably be enhanced by the greater understanding on the part of the patient of what the physician is doing for him.

Only the doctor can remove that fear by 20 or 30 minutes of conversation.

I'm not suggesting that we withhold any information from the patient because, first of all, it would be totally dishonest and secondly, it would defeat the very purpose of the insert. I do think that a patient on the birth control pill should know about the incidence of phlebothrombosis.

If you're going to tell a patient the incidence of serious adverse reactions, then you have to tell him that a concerned medical decision was made to use a particular medication in his situation after careful consideration of the incidence of complications or side effects.

Emotionally unstable patients pose a special problem

There are patients who, because of severe emotional problems, could not handle the information contained in a patient package insert. Yet if we are going to have a package insert at all, we just can't have two inserts. I think we might simply have to tell the families of these patients to remove the insert from the package.

Legal implications of the patient package insert

Just what effect would a pa-

tient package insert have on malpractice? We could try to avoid any legal implications by pointing out that the physician has selected a particular medication because, in his professional judgment, it is the treatment of choice. For instance, you can't tell everyone taking antihistamines not to work just because a few patients develop extreme drowsiness which can lead to accidents. And what about the very small incidence of aplastic anemia rarely associated with chloramphenicol? If, based on sensitivity studies and other criteria, we decide to employ this particular antibiotic, we do so in full knowledge of this serious potential side effect. It's not a simple problem.

How do we handle an insert for medication used for a placebo effect?

With rare exceptions, physicians no longer use medications for a placebo effect. This question does raise the issue of how a patient may react to receiving a medication without a package insert.

Preparation of the package insert

The development of the insert ought to be a joint operation between physicians, the pharmaceutical industry, the A.M.A. and the F.D.A.

I view the A.M.A.'s role as a coordinator or catalyst. It is the only organization through which the profession as a whole, irrespective of specialty, can speak. It has relatively instant access to all the medical expertise in this country. And it can bring that professional expertise together to ensure a better package insert. The A.M.A. can work in conjunction with the industry that has produced the product and which is ultimately going to supply the insert.

I don't think we should rely, or expect to rely, on legislative committees and their nonprofessional staffs to make these decisions when it is perfectly within the power of the two groups to resolve the issues in the very best American tradition—without the government forcing us to do it. I think the F.D.A. has to be involved, but I'd like them to become involved because they were asked to become involved.

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instance, where 35% of all children were found in need of psychiatric care "and the parents were not even aware of it."

The treatment proposed is an intuitive experience with a proliferating profusion of techniques ranging from kinetic drawing to play-therapy. The big question is however: does it really work? If it does not, protracted treatment becomes a gamble on the chance-effects of time. The demonstrable results are overloads of public clinics and case backlogs which in turn are used to imply insufficient public funding.

Myth No. 12: Widespread not only among the lay public but among lay mental health workers and planners, is an unrealistic view of the effectiveness of psychotherapy as a scientifically established methodic system of verbal treatment of psychoses. Unlike in other fields of medicine, there is no mechanism for the evaluation of the results of the dozens of different forms of psychotherapy. Reports in the literature on the effectiveness of the many modalities are conflicting and mutually damnatory. It is difficult to see how community psychotherapy at public expense can be dispensed sanely without any control of effectiveness.

This is in sharp contrast to the strict statistical criteria required for the introduction and use of new psycho-active pharmaca such as those used in the treatment of the manic-depressive disorders. The Food and Drug Administration continues to curb the availability of drugs of uncertain usefulness. By contrast, psychotherapy offers to the public a variety of techniques and services whose values have not been clearly established. They range from precepts acknowledged as having validity and applicability in selected cases, to—in the opinion of some critics—a gigantic hoax, oversold to a defenseless and gullible public.

Myth No. 13: That all psychotherapy must be broadly covered by medical insurances, and increasing legislative pressure is being exerted to achieve this, particularly under any future federal medical care plan.

Aside from the understandable demand for coverage of the treatment of psychotics, of pharmacotherapy, of diagnosis and consultation, perhaps for limited counseling, there is again an over-projection in requests to cover the undefinable area of the neuroses. A field in which opinions are polarized and may vary as to whether a problem requires four sessions or four years of intensive treatment is unsuited for fee-for-

service insurance, save for some special, high-priced private arrangements.

Assuming that verbal psychotherapy, by whatever method, is valuable, the question of the crazyquilt of techniques and length of treatment arises if governmental resources derived from tax money are to pay for it.

The classical psychoanalytical methods—no matter how worthy—are enormously time consuming and expensive, and would bankrupt any fiscal resource. The fees paid for analysis have been presented for so long as being not a token, but an actual part of the therapeutic relationship that the intrusion of third party payments appear to require some subtle, diplomatic re-rationalization. If a strong emotional component of the analysis has been claimed for the exchange of money, would not insurance coverage impair the treatment's effectiveness? Furthermore, because of the time and cost involved, and because there are fewer than 2,000 psychoanalysts in the country today, classical psychoanalysis has been and is limited to a small, highly selected group of patients, and by necessity it has to remain so.

No criticism is meant regarding the outstanding quality of care given by some psychotherapists and psychologists, but quality control as in the field of pharmacotherapy is impossible to achieve. Nor should the widespread need for individual psychological counseling be underestimated. The intelligent individual with personal problems may be able to appraise for himself the values received for the moneys expended. Again, because of the cost and the impossibility of monitoring indications, length of care, or results, governmental resources should be left out of financing these practices, whether provided by the trained, knowledgeable therapist, the existentialist, the transactionist or the bartender. No one knows which of these techniques are valuable and which are merely costly.

In sum, community mental health has real, but limited value. The earlier belief that it will provide a substitute for custodial hospitals has proved to be an over-optimistic illusion. From a public health angle, further research in preventive and curative psychiatry is as crucial as research in cancer. The disbanding of state hospitals is an idea whose time has gone; the need for an improved version of such institutions will remain for many patients and for many years.

A Journey into the Past: History of the *Connecticut State Medical Journal* 1936—1958

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As the Connecticut State Medical Society moved into the 1930's the work of the part-time Secretary, Charles W. Comfort, Jr., steadily increased. The annual volume of Proceedings of the Society was appearing about one year after the period covered. It was apparent to many that this situation was producing problems in keeping the membership informed of the activities of the Society's officers and Council. In his report to the House of Delegates as Chairman of the Council, James Douglas Gold, on May 25, 1935, discussed the desire for a more effective business organization in the Society and the fact that there existed "agitation for a full-time secretary and a business office for the Society." The following day the House of Delegates voted to request President Murdock to appoint a "Committee of 8 to inquire into the Administration of the Office of Secretary." This was done and, as a result, at a meeting of the House of Delegates convened in New Haven on January 16, 1936, the Council made the following recommendations: (1) that the single annual volume of the Proceedings be discontinued; (2) that in place of the Proceedings a Quarterly Bulletin of the Society be published in May, August, November and February of each year and distributed to all members of the Society, listing what the Bulletin should contain; (3) that there be created the office of Administrative Secretary chosen from the Society membership, also a Legislative Secretary, and a Secretary on Scientific Work. At the next session of the House held in Hartford on May 21, 1936, their recommendations were approved and the following were elected: Creighton Barker, then serving as Secretary of the New Haven County Medical Association, to be Administrative Secretary; Charles W. Comfort, Jr., to be Legislative Secretary; and Stanley B. Weld, then serving as Secretary of the Hartford County Medical Association, to be Secretary on Scientific Work and Editor of the Bulletin. In the annual budget for that

year \$1,400 was allocated for publication of the Bulletin. It was also voted to establish an office for the Society, this to be in charge of the Administrative Secretary. The Editor of the Bulletin was to carry on his duties from his office in Hartford.

The first issue of the Society's new publication appeared in August of 1936. Instead of the Bulletin it was named The Journal of the Connecticut State Medical Society. No official vote for this change of name appears in the records, hence it is to be assumed that the Editor used the prerogative of his office in making the change to conform to the pattern of other state medical journals. That first issue was dedicated to the late James Tate Mason who died while President of the American Medical Association (AMA). The printer was James Reid in Hartford, and all the advertising at first was obtained by the Editor, who took Thursday of each week from his practice to travel the State in the securing of advertising contracts. This initial number of the Journal contained editorials on Medical Expert Testimony and Social Security in Connecticut; messages from Daniel C. Patterson, president of the Society, and James D. Gold, chairman of the Council; a paper on Medical Expert Testimony by the Society's immediate past President, Thomas P. Murdock, and one on Activities of the State Department of Health In Carrying Out Procedures of the Social Security Act by Commissioner Stanley H. Osborn; Proceedings of the House of Delegates for the May 1936 session; program of the Twelfth Clinical Congress, and a list of the officers and committees of the eight County Medical Associations. When the second issue appeared in November 1936, it contained many favorable comments from prominent physicians across the country. At the meeting of the House of Delegates in May 1937, Dr. Barker was very gracious in his remarks regarding the Journal. The paste-up of the dummy for the printer was done by the Editor, usually in his home, and this continued throughout the entire 22 years. The second issue contained several advertisements of national companies. Soon after the appearance of the first issue the Editor was in touch with the Cooperative Medical Advertising Bureau of the AMA and from that time on the Journal was the recipient of considerable advertising copy through this medium. As the year 1937 progressed, it became evident that in order to receive the maximum of

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assistance from the Bureau in Chicago the Journal should become a monthly publication rather than a quarterly, hence the change was made beginning with January 1938 and approved by the House of Delegates.

At the session of the House in May 1937, the Council was empowered to appoint an Editorial Board to consist of four members in addition to the Editor-in-Chief as chairman. All the editorial and advertising policies were invested in this Board. The first Board consisted of Herbert Thoms of New Haven for 4 years, Frank S. Jones of Hartford, designated Custodian of Funds, for 3 years, Oliver L. Stringfield of Stamford for 2 years, and Charles Mirabile of Hartford for 1 year. The Treasurer of the Society was instructed to pay the Custodian of Journal Funds \$1.25 per capita annually as a subscription charge for the Society's membership. With this sum and the income from advertising the Journal was expected to carry on. The Editor-in-Chief, now named as such, was receiving a modest stipend for his services.

In September 1938, the duties of the Secretary on Scientific Work were divided by the creation of a Program Committee and a Journal Editor. This was a welcome move for the Editor-in-Chief, who found the Journal as a monthly publication sufficiently time-consuming.

Gradually the relationship established with the Cooperative Medical Advertising Bureau, a national organization, became one of deep and lasting friendship. The Bureau held a very instructive two-day session each year, known as the Conference of Secretaries and Editors, to which each State journal editor whose publication was a member became an invited guest without any registration fee. The Connecticut Journal was well represented at these sessions and its Editor was often a participant in the program. It was not long before he became Chairman of the Medical Advisory Committee of the Advertising Bureau and continued in this capacity for many years. Within his term of office the Medical Advisory Committee found itself at odds with the Trustees of the AMA to the point where it was felt advisable to terminate this relationship. This was done, not without some rancor on the part of certain AMA officials, but it proved very satisfactory and productive. The name of the Advertising Bureau was changed to State Journal Advertising Bureau.

One of the first members of the Editorial Board to submit a paper for publication was Frank S. Jones, whose subject was "The Use of the Rogers Method in Treating Uncomplicated Compression Fractures of the Spine." This appeared in February 1937. Beginning in August of the same year several designated sections appeared in addition to the scientific papers. These included Association of Connecticut Tumor Clinics;

State Department of Health; American Public Health Association; The President's Message; From the Secretary's Office; News from County Associations; President's Proscenium (for those of other State Societies); Our Neighbors; Editorials and Abstracts from other journals, and Book Reviews, later called Quarto Notes. There was an occasional section devoted to the Institute of Living, one for Orthopedic Surgery, and a list of placement opportunities for Connecticut physicians. The Roster of the Society appeared in August each year and the Charter and By-Laws in February. A special feature of the Journal from time to time was the dedication of a particular issue to a certain prominent dignitary such as the Governor of Connecticut or the President of the AMA.

In May 1938, the name of Creighton Barker appeared as both Executive and Legislative Secretary. In September the masthead included the County News Editors, six of the eight with Tolland and Windham added later. As provided by direction of the House of Delegates, its proceedings were published in detail, as well as the papers delivered at the Clinical Congress. That year many interesting articles, in light of present day experience, dealt with lung and heart surgery, advances in anesthesia, drug and alcohol problems and an amazing number on syphilis. The editorials for the most part were written by the Executive Secretary and the Editor and were not signed.

In October 1938, the Journal set up a separate office at 54 Church Street in Hartford and placed in charge a full-time stenographer "of experience." The Journal Board was meeting quarterly in New Haven.

The year 1939 was a busy one for the Journal. Advertising increased 30 per cent over the previous year. The Connecticut Bar Journal reported an article on Physicians and Lawyers by Attorney George H. Cohen. In March appeared an editorial on the problems of assimilating the refugee physician, and new sections on The Doctor's Office and on Proctology were added. Two months later began the first of a series of articles on the proper selection of accident and health insurance and of life insurance. Prepayment Medical Care and Federal Health Insurance were lively issues under discussion, and in August the subject of Birth Control made its debut in a paper from Waterbury. The December issue carried the Journal's first historical article, "Litchfield County Medical Association and Dr. Elias Pratt" by Walter R. Steiner. At the House of Delegates meeting in May 1939, Dr. Barker was made a full-time Executive Secretary, effective January 1940. The annual dues of the Society were increased to \$15.00 and the Society budget for the Journal set at \$2,400. A committee was appointed by the president to study the status of the osteopathic physician. Those members of the Society of over 40

years standing were exempted from dues at this time. This became a regular provision in subsequent years.

The Connecticut Hospital Association made a formal request to be allowed to use the Journal as its official publication. This was approved and made effective with the issue of January 1940, in which a section was allocated to it, and Sidney G. Davidson was made its representative on the Journal Board. A General Practitioner's Forum, subsequently called The Forum, was added to the Journal for the discussion of the latest developments in medicine, and a representative from the Yale School of Medicine, Arthur J. Geiger, was added to the list of County News Editors. Prepaid medical care was evoking interest as evidenced by the fact that the House of Delegates in May voted to request the President of the Society to appoint a Committee of 5 to investigate this matter. The clouds of war appeared to be getting darker and closer. Medical Preparedness For War attracted the interest of the Society, and the AMA held a national conference on this subject in Chicago. Several articles on this subject were published in the October 1940 issue together with an accompanying editorial. The following January this became a regular section of the Journal. Near the end of 1940, a second historical article appeared, this time "The Beginning of Medical Practice in the New Haven Colony" by Herbert Thoms. Under his leadership a series of such articles followed, leading up to Society's Sesquicentennial in May 1942.

A principal innovation in 1940 was the selection by the Board of a local advertising representative to operate on a commission basis. That same year the by-laws of the Society were amended to make the Editor a member of the Council. The financial success of the Journal in 1940 enabled the Society to realize an ample operating surplus. The budget for the Journal now stood at \$3,600.

When the March 1941 issue appeared in a new cover with a border of Colonial red designed by Dr. Thoms, some unwary individuals mistook it for TIME magazine. There were several other changes, notably a new format and new type, for a change had been made to a new printer, the Whaples-Bullis Company in New Haven. The representative of this company, Donald P. Bullis, a graduate of Rensselaer Polytechnic, proved of great assistance to the Editor in the following years. A Legislative Section now appeared each month and later in the year a section on Industrial Health and one on Public Affairs were added. Dr. Thoms was appointed Vice Chairman of the Sesquicentennial Committee and Chairman of its Planning Committee, with the Editor a member of the latter.

1942—the U.S. was now in the war following the devastating attack on Pearl Harbor by the Japanese.

Secretary Barker, in the columns of the Journal, offered assistance to those physicians applying for commissions in the Medical Corps of the Army or the Navy. Each month appeared an increasing number of articles relating to physician activities in, and the problems of, World War II. A section, Medicine and the War, was started and a special correspondent, Francis A. Sutherland of U.S. General Hospital No. 39, was added to the list of County News Editors. The Editorial Board was meeting almost monthly, and the Editor found himself a member of the Connecticut Procurement and Assignment Service.

This was also the year of the Society's 150th anniversary. Dr. Thoms was compiling a sesquicentennial volume, *The Heritage of Connecticut Medicine*, to be available at a modest price. In this volume were included historical articles by, among others, the two Editors and the Secretary of the Society. The anniversary program took place in Middletown on June 3 and 4, 1942, the same city where the first meeting of the Society was held on October 9, 1792. It was a notable session, well documented in the special Anniversary Number in June which netted the Society a profit of \$1,500. In this issue there were greetings from Governor Hurley of Connecticut, the President-Elect and the Chairman of the Board of Trustees of the AMA, President Gold and President-Elect Leak of the State Society, the Presidents of the other State Medical Societies and of the New York State Society, and the five College Presidents in Connecticut. The orator of the day was Professor Logan Clendenning of Kansas and the Anniversary Dinner was addressed by Colonel Fred Rankin, President-Elect of the AMA. Included were many historical items of interest as well as historical articles, two of the latter by the Executive Secretary and the Editor. Photographs were included of officers and committee chairmen.

The House of Delegates, meeting in Hartford in May 1942, elected Herbert Thoms to be Literary Editor and the Editor was then named Editor-in-Chief. Harold S. Burr of New Haven and Lee D. Van Antwerp of Meriden were added to the Editorial Board from which Charles Mirabile retired at the expiration of his term of office. The elevation of Dr. Thoms to Literary Editor proved to be an exceedingly propitious step. He served the Journal for over two decades and did much to stimulate members of the Society to write for publication. He continued his interest in securing and publishing historical articles and by his work enhanced the value of the Journal and helped to place it among the best of its class. From then on for several years the major part of the editorials were written by him.

In September 1942 were published two articles on women in industry in relation to the war. Two months

later appeared an outline of the contents of a book to be published, titled *Essentials of Emergency Practice*. This volume was written entirely by members of the State Medical Society and was conceived and produced by Dr. Thoms. The fact that there existed a shortage of nurses was receiving attention and was emphasized by an article in the November issue. The Society's budget for the Journal had now reached \$4,000, but in that year it used only one-half of this amount.

The following year, 1943, saw many changes in the Journal, now having reached its seventh birthday and having attained a position as one of the foremost and most attractive of the State medical journals. In June, Paul P. Swett was added to the Board in charge of the large number of exchanges, both national and foreign. He replaced Lee D. Van Antwerp, then serving in the U.S. Army. The Literary Editor was made a member of the Council and was named Secretary of the Committee on Clinical Congress. The Editor-in-Chief was made a member of this latter committee, as well as of the Committee on Prepaid Medical Service, along with Oliver L. Stringfield from the Board. Less frequent meetings of the Board were held that year, probably due to the increasing demands being made on the time of physicians. The State Society in 1943 took a forward step in forming a Woman's Auxiliary, to which was allotted each month a place in the Journal.

The December issue was dedicated to the Connecticut physicians serving in the armed forces and contained 16 pages of letters from this group as well as a list of all those in the service. Letters from this group appeared each month during World War II. A new section, Across the Continent, was added, containing important news from other State medical societies. In addition to historical articles and those relating directly to the War, the issues of 1943 produced some very interesting discussions. There was the Sister Kenny treatment of poliomyelitis victims, the Beveridge Plan for social security in Britain, sulfonamide therapy, a preliminary Report on Prepaid Medical Service with editorial comment, the Wagner-Murray-Dingell bill for social security in the U.S., and the decision of the Society to proceed with a prepayment plan for medical service. The tragic Cocoanut Grove fire in Boston was covered in the February issue. On the lighter side there were monthly comments by Peripateticus, written by anonymous authors.

After the sesquicentennial the idea of a permanent home for the Society was brought up from time to time. A committee to study the matter issued a favorable report, as a result of which the House of Delegates voted in 1944 to proceed with construction of a building. Definite plans were drawn up under the guidance of the Trustees of the Building Fund, with

Dr. Gold named as chairman. By mutual consent, the Connecticut Hospital Association was dropped from the Journal in January 1944 and Sidney G. Davidson resigned from the Editorial Board. The Editor-in-Chief was named Chairman of Region 2 Wartime Medical Meetings, which were to provide postgraduate and refresher courses of study to medical officers of the Army and Navy serving at home stations. The problem of professional liability insurance appeared that year and a committee was appointed to make a study of it. The Hartford circus fire struck on July 6, resulting in scores of dead and severely burned. This was covered in the Journal and led at a later date to several timely articles on the treatment of burns. Four special issues appeared that year, the one in December again featuring letters from Connecticut physicians in the Armed Forces, this time numbering a total of 32 pages and including a thrilling account of the escape of Captain Francis Gallo from a German train of prisoners.

During the war years which followed, the Journal continued to flourish. It published important news of Connecticut physicians in the Armed Forces, listing the names of those in the service. Toward the end of the war the names of those returning were published. Many of our doctors received citations and awards for valiant service, and these were prominently noted in the Journal, along with the names of casualties. Advertising continued to increase with the advent of color produced by a new process, to the extent that in 1945, when the Journal was ten years old, it realized a profit of \$2,600. The Editorial Board decided to depart from the firm principle of the AMA and to accept advertisements of drugs well proven by usage, but not approved by the Council on Pharmacy and Chemistry. In this the Board was fortunate in having the advice and assistance of Dr. William T. Salter of the Yale School of Medicine. After several confrontations the AMA saw the light and broadened its advertising policy.

Letters from members in the Armed Forces, usually in large numbers, continued in the annual Army and Navy Number. In March 1945, the Navy called for 4,000 more physicians, and the following year the Army announced the need for 60,000 R.N.'s. The Journal made known the fact that a curriculum for intern and residency training had been arranged by the Society's Post-War Planning Board. In 1945 a new section, Medicine and the Veteran, was added and a special Veterans Number was published. In November the experience of one of our members at the bombing of Nagasaki was a special feature. An unusually fine article on "Medicine During World War II" by Dr. Perrin Long of Johns Hopkins appeared in August 1946. That was an outstanding year for the Clinical

Congress and was also the Centennial Year of the Hartford Medical Society, written up specially for the Journal. In September 1946, the section on Medicine and the War was eliminated. At this time a special committee was appointed to complete a history of the Society's participation in World War II.

The campaign for funds for the Society's new home continued, with a list of donors published at intervals in an endeavor to reach the goal of \$50,000. In 1946 property was purchased at the corner of Edwards and St. Ronan streets in New Haven, and plans were drawn up for construction of a building.

Many duties as well as honors were accorded the two Editors and there were some changes in the Board. The Literary Editor, early in 1946, published a suggested plan to augment graduate medical training. He was elected Vice Chairman of the Clinical Congress and appointed to the Advisory Committee from the Council to the Trustees of the Building Fund. It was due to his close association on the faculty of Yale Medical School that the Journal enjoyed a very happy and profitable relationship with that institution throughout the years. The Editor-in-Chief was elected a delegate to the AMA and was appointed one of two representatives to the New England Post Graduate Assembly. From the Editorial Board, Arthur Geiger was appointed to the Committee on State Blood Bank Donor Services, and Frank S. Jones to the Committee on Health and Physical Education. Lee D. Van Antwerp returned from the war and in May 1946 was re-elected to the Board to replace Oliver L. Stringfield, whose term had expired. Van Antwerp was commissioned lieutenant colonel in the Connecticut National Guard and placed in command of the 118th Medical Battalion. Paul Swett, who had been elected to fill the vacancy on the Board left by Sidney Davidson's resignation, now furnished the Journal with an historical article on "Orthopedic Surgery in Connecticut." This was completed in two issues.

The years 1945 and 1946 were full of the discussion of problems vital to the medical profession. Possibly the hottest subject was that of compulsory health insurance, previously instigated by the Murray-Wagner-Dingell bill and by the example set by the Beveridge Plan in Britain. One of the best presentations of this problem, prepared specially for the Journal, appeared in May 1945 and was written by James R. Miller. That was only the beginning, the end of which is not yet in sight. President Truman made public his own health program, which was but another form of socialized medicine. There were also articles on school health education; medical care, particularly of tuberculosis and the industrial worker; care of the chronically ill; medical care of the veteran, which was finally placed in the hands of the individual States, and

prepaid medical service was discussed, for which the AMA had its own plan. The Council appointed a committee to study the operation of the Workmen's Compensation Law. The Hill-Burton Hospital Construction Act, Blue Cross (prepaid hospital insurance), and Group Practice all were mentioned in the Journal. Discussion of a second medical school in Connecticut appeared in November 1946, and two articles introduced the reader to problems of future years, "Early Rising in the Puerperium" and "The Rh Blood Factor." The Society made a change in its by-laws to admit medical students to its membership.

In 1946 the Editor-in-Chief was made Chairman of the State Journal Advertising Bureau. That same year the member journals of the Bureau agreed to return to the use of advertising products approved by the Council on Pharmacy and Chemistry as it had satisfactorily revised its rules. In the December issue the President of the State Medical Society, in his annual address, praised the Journal as one of the best in its group. The section previously called Correspondence was changed to Letters to the Editor in the hope that it would provoke more expressions of opinion from its readers.

At the beginning of 1947 the Journal was continuing to discuss the many problems of medical practice, emphasizing public relations, the care of veterans and the treatment of hypertension. The Literary Editor was co-author of an article on the "Rooming-In Plan for Mothers and Newborns," and there were many articles dealing with cancer, to the extent that a special section was allotted to this field. Medical care continued to hold a prominent place, influenced by the number of bills introduced into Congress. The Editor-in-Chief was the author of "Connecticut and the Founding of the American Medical Association," appropriately timed to coincide with the centennial celebration of the latter.

July 25, 1947 officially marked the end of World War II, but for over a year physicians had been returning from military service and were so listed each month in the Journal. A regular feature was News from Washington placed in the section on Public Affairs for the purpose of keeping readers informed of government developments. Early ambulation was not being extended to surgical patients. The shortage of nurses was presenting a problem, added to their demand for shorter hours and more pay. As one method of solution there appeared a discussion of the Practical Nurse. Socialized medicine in Europe was gaining attention. The Hartford Community Cancer Clinic was featured and the State announced its decision to treat subjects of alcoholism as patients, not criminals. Each month there appeared editorials by

George Blumer, signed Barker supplied biographies G.B., and television had now arrived in the operating room.

At the meeting of the House of Delegates in May 1947 Benjamin V. White was elected to the Editorial Board to replace Lee D. Van Antwerp who had resigned to join G.D. Searle & Co. Dr. White became responsible for the section on Progress in Medicine. The profit of the Journal that year amounted to \$2,060. The year ended with a reminder from the Trustees of the Building Fund that memorial gifts were being received but subscriptions were lagging and building costs rising.

At the Secretary-Editors Conference in Chicago in November 1947 the representative of the Waverly Press in Baltimore announced that the Connecticut Journal showed outstanding typographic distinction and was the most legible and attractive of the four State journals selected for consideration. This was very gratifying, as the other three were of top quality.

The year 1948 was an active one for the Journal as well as for the Society. The Committee on the Study of the Organization of the State Medical Society sent out a questionnaire to all members in order to evaluate reader interest in the Journal. Of the one-third replies, 91 per cent read the Journal in whole or in part. There was an equal demand for more articles written by our readers and by national figures. About 50 per cent used the book reviews in selecting such volumes and the same number used the advertising pages in purchasing drugs and supplies. Agreement with editorial opinions reached 87 per cent.

Special articles during the year dealt with the chronically ill, health in education, the medical program at Newington Hospital, operation of Public Law 725, voluntary prepaid plans in rural communities, and the Connecticut Cancer Registry. Editorials covering a wide range and up-to-date developments were emphasized in the various sections.

The subject of Prepaid Medical Care was receiving serious consideration and in May at the annual meeting of the Society there was presented the results of an outstanding comprehensive committee study of this problem. The Journal was represented on this committee by the Literary Editor. The subject of cancer was on the minds of all at this time and resulted in the first Cancer Conference for Physicians in Connecticut on March 6, 1948. In November the Journal published a Supplement containing ten articles by leaders in the field of cancer. Also in March appeared an account of the first full-scale medical practice group in Connecticut, formed in New Britain. Historical articles were becoming more frequent again after a lapse during the war. Illustrated stories featured Hartford Hospital's dedication of its new \$8 million building, plans of Day-Kimball Hospital for a

\$300,000 building fund, and the dedication of Bristol Hospital's new building. A series of Military Biographies of members of the Society was introduced in April 1948 and continued through several succeeding issues.

The Editorial Board, which had omitted formal meetings during the war, now met quarterly again. Readers were informed that the Journal was being sent to many countries overseas on an exchange basis. Extracts from all of the exchanges, both national and foreign, were compiled by Paul P. Swett. The Journal published President James R. Miller's outstanding address on "Government and Medicine." Residency Training for General Practice appeared in September, and in the same issue postgraduate opportunities were emphasized with an announcement of the courses at Yale. An interesting first-hand account of the second annual meeting of the World Medical Association held in June appeared in the September issue. The December issue emphasized prepayment medical service with Connecticut Medical Service (CMS) outlined in detail. The Journal offered subscriptions to "Medicine of the Year," a series of articles on medical progress, as a continuing supplement to the Journal. These were later published in book form. Benjamin White of the Board contributed an article, "Screening as a Viewpoint in Medical Practice."

Bids were let out in 1948 for the Society's building. The Literary Editor was now serving on the Committee on Post-Graduate Medicine and Tumor Study. The detailed account of each meeting of the House of Delegates was not printed following the war due to lack of space, but actions taken by the Council and the House were always reported. Due to a drop in advertising, the Journal had a deficit for 1948 of \$4,500 with an increase at the same time of the Society's membership to 3,000, resulting in a per capita cost to the Society of \$1.50 in 1948.

The postwar years were marked by many new and interesting features. In January 1949 appeared the first article on "Natural Childbirth" by the Literary Editor, Dr. Thoms. CMS began its enrollment of physicians. Original papers by members of the Society covered such subjects as "Fluid Balance and Intravenous Therapy." Another first was a paper on the "Treatment of Tuberculosis with Streptomycin." An increasing financial crisis in the hospitals was editorialized in April 1949. Benjamin White of the Editorial Board wrote on "Lipotropin Agents and Sulfur-Containing Amino Acids." AMA began a campaign against compulsory health insurance and this was reflected in a new section in the Journal as well as editorial comments. The Physicians' Art Exhibit was illustrated in the Convention Number with copies of paintings by Harold Burr of the Editorial Board. In June 1949 Dr.

Barker supplied biographies and photographs of the Connecticut members of Congress. For the first time there appeared a discussion of licensure of foreign medical graduates. Many bills on the Welfare State were introduced into Congress that year. A change in the name of the section on Campaign against Compulsory Health Insurance was made to Educational Campaign. The Editor-in-Chief contributed an article on "Child Health Service in Connecticut."

On August 25, 1949 the Society moved into the new building and in October a special issue contained several articles well illustrated, in addition to photographs of the Trustees of the Building Fund and lists of memorial gifts and of all the contributors. Harold Burr added an historical article on the Connecticut State Medical Society.

That same year the Literary Editor was invited to attend the meetings of the Council and Benjamin White was elected an alternate delegate to the AMA. The House of Delegates voted to send copies of the Journal to the secretary of each County Woman's Auxiliary. Advertising increased and so did the cost of publication to the extent that there was a deficit in 1949 of \$8,000.

Again our nation was involved in war, this time in Korea beginning in June 1950. The Doctor Draft Bill, operating under the Social Security Service Act, was amended, and again physicians from Connecticut were subject to military service. The Journal suffered the loss by death of Paul P. Swett, who supplied the section on Our Exchanges. Marshall S. Pease of Ridgefield was selected to fill the vacancy. A new section, The Historian's Note-Book was added with contributions thereafter from George Blumer, Arthur S. Brackett and the Literary Editor. In this section appeared two historical papers, "The New London County Medical Association" and "Colchester's Most Distinguished Physician." A regional hospital council was proposed for Connecticut. The section on Medicine and the Veteran was dropped. Annually in the February issue appeared the Charter and By-Laws of the Society, and in the August issue, the Roster of Members. A new local advertising representative was secured, the previous one being unsatisfactory.

To the Editors and Board the outstanding event was the moving of the Journal office in August 1950 to the Society's new building in New Haven. This made necessary the securing of a new Assistant to the Editor. Mrs. Vivian C. Feriola was selected from a number of applicants and has served the publication faithfully to this date. The Journal suffered another serious loss that year when C. Charles Burlingham died suddenly while in London. He had been a staunch supporter of the Journal as well as a frequent contributor and a reviewer of many books in the field of psychiatry.

Manuscripts were submitted in increasing numbers during 1951. They covered such subjects as the new contract of CMS; early medical practice in Waterbury; the site of the Society's annual meeting; drug addiction; preventive geriatrics; civil defense; Yale rooming-in plan; increase in Cesarean section; subtotal hysterectomy, and screening in the physician's office. An account appeared of the World Medical Association meeting in New York at which the Editor-in-Chief was one of the speakers. There were many articles on health legislation and socialized medicine. The Convention Number carried an historical sketch on Stratford and another one on "Some Connecticut Medical Naturalists" by the Literary Editor. For the first time there was a discussion of premarital counseling and included was "Medical Care for the Indigent, the Aged and the Blind." Hospital construction was enjoying a boom in our State, St. Francis Hospital dedicating its new building. The Connecticut Regional Blood program was described in June, and the Matching Plan for interns was editorialized in November. Arthur Geiger resigned as News Editor from Yale Medical School in 1951.

Interest in the Korean War was increasing with the result that a new section on Military Affairs was added. "The Medical Aspects of Atomic War" had its place in the December issue. Medical Reserve Officers to the number of 250 were ordered to duty in the U.S. Army.

In the following year of 1952 the May issue was characterized by scientific papers solely on tuberculosis. In another issue appeared an article on the "Connecticut Plan for Medical Care of Veterans." An unusual feature one month was four pages of statements by the Presidential and Vice Presidential candidates and the Congressional candidates from Connecticut. During the year the subject of medical education occupied a prominent place when the AMA formed its Medical Education Foundation. Federal aid for this worthy cause was advocated. The Roster of Members now appeared as a separate Supplement to the August issue. Note was taken that the number of judgments against physicians was becoming an ever increasing problem. CMS, in a section devoted to that organization, reported an enrollment of 500,000.

Benjamin White resigned from the Board and was replaced by Clair Rankin of Hartford, who assumed responsibility for the section on Progress in Clinical Medicine. The Editor-in-Chief was again elected a delegate to the AMA, and the Literary Editor was on leave during the year because of illness. Many of the editorials now were written by the Society's Secretary, who kindly stepped in to fill the breach. For the first time the Chicago Conference of Editors and Business Managers of State Medical Journals was conducted by the State Journal Advertising Bureau instead of by the

AMA and the Connecticut Journal was given the honor of arranging the program. The aims and accomplishments of these journals were editorialized for our readers. Reserve medical and dental officers were returning from the Korean War in increasing numbers and being replaced by others called up under the draft. Hospital admissions were increasing, with the length of patient stay diminishing. The Journal called attention to the "vanishing dollar" and at the same time reported a profit of \$600 for the year and income from subscriptions outside the Society of \$1,000.

A résumé at the beginning of each scientific paper was added in 1953, and a new section appeared on the Clinical-Pathological Conference. The Journal reported on the new committee appointed by the AMA to evaluate the status of the internship and medical education. The question of a second medical school in Connecticut was discussed in an editorial. The problem of improvement in medical care in Connecticut resulted in the appointment of a State committee to study the same. For the first time in history, in 1953, the President of the AMA addressed the Connecticut Society's House of Delegates. At the Council meeting in October the future operation of the Journal was discussed at length and a special committee selected to conduct a study. On this committee were H. M. Marvin, Chairman, C. Louis Fincke and John Gallivan.

In July 1953 the Korean War was officially terminated. A new VA Hospital was opened in West Haven. The First World Conference on Medical Education was reported from London. Reciprocity of licensure between the States was discussed and CMS decided to terminate its agency agreement with Blue Cross. The Journal published an editorial on the future of osteopathy. The State Medical Society embarked upon a program of grants, the first scholarships going to Schools of Nursing. The subject of fluoridation appeared both in a scientific article and an editorial. A full-time State Department of Mental Health was formed, and again there was discussion of the Physician-Hospital Relationship. The Literary Editor resigned from the Yale Medical School faculty as of December 31, 1953.

Following suggestions made by the ad hoc committee charged with studying the operation of the Journal, a change in the by-laws increased the number of the Editorial Board in 1954 to 15, made the Editor-in-Chief Managing Editor and made the Literary Editor Chairman of the Board. The increase in the Board was designed to represent, as widely as possible, geographical and specialty groups.

The 1954 Convention Number covered the event with illustrations, the program, and photographs of all

the speakers. In addition the Hartford Hospital's 100th anniversary was featured, and for the first time there was an article on "Tobacco Inducing Cancer" with an accompanying editorial. Hospital charges were explained, prevention of malpractice suits was urged, and there appeared increasing interest in plans for retirement. Social Security for physicians was occupying more and more space, with discussion both pro and con. Editorials on socio-economic and public health problems increased, and there was more interest in the health problems of the aged. Medical catastrophic insurance was now available. Scientific papers by members showed a definite increase. The attendance at the annual Clinical Congress was steadily declining, and, as a result, the Council decided to send out a questionnaire in order to determine the future of the Congress. The deficit for the Journal for 1954 was \$2,800, less than one dollar per member.

Herbert Thoms resigned as Literary Editor and was succeeded by H. M. Marvin in 1955. Thomas Markie of Westport, a member of the Editorial Board, died in October of that year while in active practice. Both advertising copy and scientific papers increased and the Journal deficit was reduced to approximately 50 cents per member. The various regional news sections were combined into one, Around the State. The Board offered a prize in 1955 for the best manuscript submitted by a member of the Society. The Literary Editor was made the Society's representative on the committee to arrange the program of the AMA's Clinical Session to convene in Boston in November. A new section, Our Medical World, was authored by a member of the Society. During the year, articles were published on the practice of medicine by hospitals, professional liability insurance, with an editorial, the Society's employment program, and on addiction with an editorial. A second medical school in Connecticut was editorialized following an exhaustive report by a committee appointed by the Governor.

It had become apparent that additional space was required in the new building to house all the activities of the Society and some of its related organizations. For this reason, on recommendation of the Council, the House of Delegates voted to proceed with such in 1955. Funds for this purpose were to be obtained by voluntary contributions to the Trustees of the Building Fund.

Following the death in 1956 of Dr. Gold, former president of the Society and Chairman of both the Council and the Trustees of the Building Fund, the James Douglas Gold Number in August contained a collection of scientific articles on dermatology, his chosen specialty. The loss of this fine gentleman was felt keenly by all. Unselfish in his devotion to the interests of physicians and the practice of medicine in

Connecticut, he had endeared himself to everyone with whom he came in contact. It was only fitting that, when the addition to the building was completed, one of the conference rooms should bear his name. At this time other conference rooms were named for Dr. Barker and Dr. Weld.

A new section appeared in the Journal in January 1956 called Insurance and the Physician. The section on Medicine and the War, later named Military Affairs, was discontinued. Medicare was in the planning stage with a committee appointed to set up fee schedules. There was much discussion of Social Security for physicians, opposed by the AMA. Cancer was considered in several articles and editorials. The subject of medical malpractice insurance appeared again, and there was an article on "Corporate Practice in Connecticut." The Journal had a good year, with many Board meetings well attended. The closing paragraph of the Managing Editor's report for 1957 expressed well the ideals of the editorial staff:

Osler's aphorism is worthy of repetition. "The artistic sense of perfection in work is a much-to-be-desired quality to be cultivated. No matter how trifling the matter in hand, do it with a feeling that it demands the best that is in you, and when done look it over with a critical eye, not sparing a strict judgment of yourself.

In 1957 there were murmurings from the Society members which reached the ears of the editors. At first the criticisms seemed based on the cost of the Journal. Some wanted a more modest publication, others, only a house organ. Some wanted this section omitted, and some, that section. The Managing Editor gave his reasons for the size of the Journal as follows: its purpose was (1) to keep its readers informed of the latest developments in medicine in Connecticut and the U.S.; (2) to keep its readers informed of all the activities of the State Society and the County Associations; (3) to afford members an opportunity to develop scientific interest and literary talent; and (4) to maintain the proper proportion between printed matter and advertisements. It was explained that 10 years ago no color advertisements and no inserts were used. Now there was much of both. The cost of labor in the production of the Journal had increased considerably, in part due to these new processes. This is reflected in the deficit of \$4,400 for 1957.

In July of that year a special Thomas P. Murdock Number appeared containing 13 papers by him alone and three as co-author. These were preceded by many resolutions and tributes to him. Dr. Murdock's untimely death in the prime of life earlier that year was a great blow both to the Society and to the Journal which he had ardently supported. Tom Murdock was a hard worker, devoted to his profession and to his

fellow physicians. His ability was recognized nationally and his services at home were rewarded by many positions of responsibility.

This year, 1957, the journal carried in one issue, as directed by the Council, two papers on Social Security for physicians, one for, the other against. The AMA House of Delegates continued to oppose this plan. The following month there was surprise when the results of a questionnaire on this problem resulted in 73 per cent of those replying in favor and 26 per cent opposed. Several articles on Medicare were published by the Secretary of the Society during the year. This was the 10th year of the report from the Connecticut Cancer Conference. There was discussion of cooperation by the Society with the State Bar Association. The section on Public Relations was now being provided by a committee following the resignation of its director. There were two articles on the hospital practice of medicine, and reports continued to appear from the Committee to study Maternal Mortality and Morbidity. The World Medical Association sessions were being reported each year and travel articles by different members appeared at frequent intervals.

The new Connecticut Blood Program was outlined in one of the 1957 issues. G. B. began a series of editorials on Smoking and Health and for the first time automobile safety belts were mentioned. A new section was allotted to the Committee on Medical Care of Veterans. Notice was taken of the organization of general practitioners in our State, and the many problems of retirement were discussed in an editorial. Marshall Pease of the Editorial Board was honored by an award from the American Academy of Pediatrics. The issue of December 1957 was the last issue to be printed by Whaples-Bullis Company.

The year 1958 was a memorable one for the Journal. In January appeared the first issue by a new printer in New Haven. H. M. Marvin resigned as Literary Editor and was succeeded by Allan J. Ryan of Meriden. Marshall Pease also resigned in January, moving to California because of his wife's health, and Dr. Marvin replaced him as editor of the section Our Exchanges. That same month Donald P. Bullis died of multiple myeloma. An interesting article appeared on "When To Use and Not To Use Antibiotics." Three new sections were formed, Connecticut Medical Service, Committee on Accident Prevention, and Committee on Perinatal Mortality. The June issue featured St. Raphael Hospital's Golden Jubilee.

When the Conventional Number appeared in April 1958 the Managing Editor had little idea of what lay ahead. Discussion between CMS and the Society had reached the point where there were all kinds of arguments, primarily among the physicians themselves over fees for various medical services and procedures

which prevented any reasonable progress with CMS and which were the source of far-reaching antagonism. A feeling of resentment against all officers of the Society took hold with the result that there arose a group who felt the best solution was to clean the entire slate and replace it with new faces, preferably among the younger members of the Society. This was done at the meeting of the House of Delegates in Stratford on April 29, 1958, where, among others, the Secretary of the Society and both Editors of the Journal were not re-elected. The following July the name of the Journal was changed to *Connecticut Medicine*.

Following is the list of the last Editorial Board of the Journal:

Stanley B. Weld, *Managing Editor*
Allan J. Ryan, *Literary Editor*
Frederick A. Beardsley, *Willimantic*
Gerald J. Carroll, *Norwich*
Charles H. Peckham, *Manchester*

Frederick C. Gevalt, Jr., *Sharon*
Mark A. Hayes, *New Haven*
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H. M. Marvin, *New Haven*
Michael S. Shea, *New Haven*
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On the Bounds of Freedom: From the Treatment of Fetuses to Euthanasia

H. Tristram Engelhardt, Jr., Ph.D., M.D.

Debates concerning the legalization of abortion often involve the prediction that abortion-on-request will lead to the legalization of euthanasia. The implication is that abortion involves a loss of respect for human life and that such a loss of respect will lead to the taking of the life of adults under the rubric of euthanasia, which is interpreted as involving a further loss of respect for life. I will take issue with such positions, and contend that abortion and euthanasia can also be understood as libertarian issues concerning the freedom of persons, not the coercion of persons. In doing this I will argue that respect for human life is best understood as respect for persons. To make this point, I will introduce distinctions between human life and human persons, and restrict my consideration of euthanasia to those cases which are, in effect, examples of assisted suicide. My conclusion will be that such distinctions can help us understand more clearly what is involved in abortion, in the related issue of fetal experimentation, and in euthanasia. My purpose will be to show how allowing such practices can be a part of protecting, rather than violating, basic human freedoms—a very unprovocative argument if one attends carefully to the restrictions I will make with respect to understanding these practices.

I. Human Beings, Human Life, and Human Persons

Discussion of ethical issues in general, and of medical ethical issues in particular, involves consideration of the rights and values of human beings, human life, and human persons. To assure clarity, important decisions must be made between human biological life and human personal life. There appears to be a difference in kind between (1) the status of human sperm and ova (instances of human haploid life), human cell cultures, and brain-dead but other-

wise alive human bodies, and (2) the status of normal adult humans. Only the latter are moral agents, individuals to whom we can have obligations, and who have obligations to us. Only they are responsible beings, entities properly the subject of blame and praise, that is, of respect as moral agents. A web of mutual obligations requires respect for each agent's freedom if these obligations are not to be reducible to the value that any one person may have for others. That is, a community bound together in terms of mutual respect of each member recognized as an end-in-himself and not merely as a means presupposes that each member is an end-in-himself, an agent that can decide freely on behalf of his own goals. Only self-conscious, rational beings can be moral agents, persons in this sense. Other individuals such as human sperm and ova, and animals which are not humans, may have value (even considerable value), but they cannot be objects of this kind of respect.

The rationale for respecting persons is that they are beings whose freedom we must respect as an element of valuing our own freedom and of acknowledging a moral law. Freedom is the cardinal concept because on it turns as well the concept of imputability of blame and praise: one can be worthy of blame or praise only for that which one chooses to do. Valuing freedom is thus unlike valuing anything else because it involves valuing the basis for a reticulum of mutual respect. This requires (despite Kant's disclaimer) a transcendental argument.¹ The necessary condition for the possibility of mutual respect, of living together as a community of agents, the members of which could never be used as means merely, is valuing free choice so as never to act directly to subvert such freedom. Valuing freedom is unlike valuing anything else because it makes possible a moral order in which agents can never be treated as means to the pleasure of others, since the basis of that order is the value of each member determining its own ends. Freedom is the only value which singles each agent out as being of irreducible value, because it is the only value which focuses back ineluctably on each individual agent. Thus one can have grounds for recognizing and treating another as an end-in-himself if and only if that other is, indeed, an end-in-himself, a free rational being, a being capable of determining its own ends. This is a Kantian point. As Kant put it:

Beings . . . if they are not rational beings, have only a relative worth as means and

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are therefore called 'things'; on the other hand, rational beings are designated 'persons' because their nature indicates that they are ends in themselves, . . . Such beings are not merely subjective ends whose existence as a result of our action has a worth for us, but are objective ends, i.e., beings whose existence in itself is an end. Such an end is one for which no other end can be substituted, to which these beings should serve merely as means. For, without them, nothing of absolute worth could be found, and if all worth is conditional and thus contingent, no supreme practical principle for reason could be found anywhere.²

I will follow Kant on this point, and will maintain that persons do have rights which are not reducible to values and goods and, moreover, that only rational beings are persons.

This Kantian point can help to clarify the nature of a number of moral distinctions made in medicine, in particular with respect to the different statuses accorded to human life. For example, a distinction between human personal life and human biological life is implicit in the brain-oriented definition of death. The first statutory definition of death, The Kansas Statute,³ defines the death of a person, rather than death of a body or an organism. It thus implicitly contrasts the death of persons with the biological life which must continue, for example, if transplantation is to succeed. Brain-oriented concepts of death allow us to determine when a person has died even if human biological life (in the sense of the somewhat integrated function of other organ systems) continues. Moreover, recent suggestions that neocortical death should be employed to identify the death of a person stresses the point that persons are conscious beings and that death involves the cessation of conscious life. These suggestions focus on the death of the neocortex, the physical substrate and necessary condition of that conscious life.^{4 5} Such attempts to define death involve a distinction between human personal life and human biological life. Further, such distinctions are made because of moral concerns: one presupposes that human biological life has value but has no rights, while human persons have rights which cannot be reduced to their value. Such a distinction is, to give an example, of particular importance in the case of transplantation. A person has the right to his life and to his organs even if he has no value or even if he has a negative value as a drain on resources. But once that person is dead, his body has no rights; it has only (!) value, even though it may continue to be biologically

alive. One has no duties to organs, though one may have a duty to persons with respect to organs. Mere human biological life can be used as a means merely (e.g., organs can be harvested from the bodies of dead persons) to serve the needs of persons.

The use of 'person' to identify rational free agents (the respect for whom cannot be reduced to their value) is a use of 'person' that would exclude many individuals now called persons. If only rational beings are persons it would follow that we do not have obligations to fetuses, infants, animals, and the very senile in the way that we do to normal adult humans, for only normal adult humans are persons in the strict sense of being necessarily objects of respect. But we also use 'person' in other than this strict sense when we treat infants, the Postoffice, the senile, and General Motors as persons. I mean to suggest a logical or even ontological point (i.e., concerning the basic categories of being). It does not follow from the fact that we have one word 'person' that 'person' is used unequivocally: persons are not all of one fabric. Infants and the very senile, for example, are persons in the special sense that we impute rights to them even though they have no duties to us, and even though they cannot decide on their own behalf (they are not free or rational and, therefore, others decide for them). There is a social practice of treating certain categories of human life which can engage in at least a minimum of interaction as if those instances of human life were persons strictly. This second, somewhat heterogeneous sense of person, I will call the social sense of person, as opposed to the strict sense. There are probably a number of other senses of 'person' including the one used in reference to General Motors and the Postoffice.

II. On Letting Aborted Fetuses Die

Policies for conduct with respect to fetuses and infants (if they will grow to be persons strictly) will depend on the general social utility of different possible practices with regard to fetuses and children. There are very good reasons for treating infants as persons: such a practice or role fosters the development of healthy children and of general social tendencies to attend to the weak and defenseless. But these goals can be pursued while supporting easy access to abortion-on-request because (1) abortion does not involve taking of the life of a person strictly or even of a conscious animal (i.e., the fetus is not a conscious animal and has only a very low level of sentience), and because (2) abortion serves many important social goods (e.g., population control and the alleviation of the social problem of unwanted children). Whatever intrinsic evil is involved in taking the fetus's life, it is less than taking the life of

conscious, fully sentient animals of other species. This is not to make light of the moral seriousness of abortions, but to stress that the claim of a woman to control her own body to the extent of using abortion to prevent having a child does not collide with the rights of another person strictly by taking the life of that person. I do not wish by implication to slight the consideration of the rights of others such as the husband-father, but I wish instead to draw clearly the distinction between the status of the mother and of the fetus.

Seen in the light of the distinctions between human biological life and human personal life, and between a social and strict sense of person, issues such as the question of supporting the life of aborted fetuses can to some extent be clarified. Since aborted viable fetuses are not persons strictly, the criteria of when an aborted fetus brought *ex utero* is to be considered an infant (and thus treated in general as a person socially) should be based on the social utility of the criteria involved. It is plausible to draw this line between an aborted fetus and an infant whenever the fetus brought *ex utero* can live and interact as a child, given only the usual aids offered after a normal term birth. That is, there is a disvalue in allowing a viable (i.e., viable in the sense of being able to live without any more effort than that supplied in the case of a normal term birth) fetus brought *ex utero* to die: it is for all intents and purposes able to be brought within the social role 'person' as any infant can be. Letting viable fetuses brought *ex utero* die is liable to have significant adverse psychological effects and may, as a result, have adverse social consequences with respect to the treatment of infants. These suggestions are, though, not arguments in principle, but are based instead on (hopefully reasonable) suppositions concerning empirical states of affairs. The point is, however, that where one draws the line with respect to the upper limit for abortions and how one develops policies with respect to sustaining aborted fetuses will depend upon social considerations and not upon the *rights* of the fetus (as if the fetus were a person in the strict sense). If the foregoing view about persons is correct, talk of a fetus's right to life cannot succeed even in the case of an aborted fetus, the life of which could be sustained, given special and extraordinary efforts. How one draws the line between an aborted fetus and an infant should then depend upon considerations of the general social utility of different policies. Thus, for example, one should not develop policies in a way that would significantly discourage late abortions,⁶ especially those that are performed because of suspected congenital defects. Such abortions have a considerable utility value. Moreover, they increase the freedom of persons strictly to have healthy children.

Deciding to define viability in terms of those fetuses that will survive without any special care beyond the care given in normal-term births probably would balance the wishes of the woman seeking abortion with the wishes of society to maintain the social use of persons with respect to neonates. In particular, such a use of 'viability' would avoid some of the moral quandaries of aborted viable fetuses: whether one should respect the wishes of the woman not to have a child or whether one should support the usual use of 'infant' and the moral practices associated with it by sustaining the aborted fetus's life.^{7 8} Scientific advances should not be used against the wishes of the woman to cause her to be the mother of a person against her will by supporting a "non-viable" fetus where "non-viable" indicates a fetus not able to survive, given the care usually offered in the case of a normal term birth. That is, there are good reasons to avoid aborting viable fetuses unless there is a commensurate good involved (e.g., the health of the mother): one wishes in particular to avoid the social trauma of having viable neonates die from the lack of the usual attention given to the newborn. But these are not sufficient reasons to extend the sense of 'infant' via scientific advances so as to sustain aborted fetuses that would not otherwise be viable.

Thus, technology, which may allow very premature neonates to survive, or even the development of children *in vitro*, should not cause the definition of viability to be altered with respect to the upper limit allowable for an abortion or practices to be changed with respect to aborted fetuses. In the case of the development of new means for preserving prematures, one would be supplying what is tantamount to a surrogate womb, extending pregnancy *in vitro* by an artificial environment. In the case of the premature infant, one engages in such action because the parents want another person strictly who the premature will hopefully become. Technology there gives reality to the free choice of the persons concerned: the parents of the premature infant. But with a woman seeking an abortion, this is not the case, and, given the population explosion, there is no general present need for more persons. There is, in short, not a sufficient social reason in such cases to constrain the freedom of the woman with respect to whether she wishes to be the mother of another person.

III. Fetal Experimentation

The general approach to issues of fetal experimentation should be clear from the foregoing. All else being equal, with consent of the woman involved, experimentation on fetuses is justifiable if it has social utility, and if the fetus will not be brought to term. The serious moral issue concerns the fact that one can

never be sure that a woman will not change her mind and decide to bring a fetus to term after having participated in an experiment on her fetus (with the original presumption that the fetus would be aborted). There is thus a potential dilemma—one would either have to violate the freedom of the woman and force an abortion, or risk injuring a future person. The allowability of such experimentation raises the same issue as any action that runs a risk of injuring persons: the question of deciding what is an allowable, or morally significant, risk.

It is important if we hope to remain clear on these matters to distinguish between (1) the potentiality of a person and (2) the potentiality of something that is not a person, to become a person. This is a distinction between an actual and potential person. If a fetus, for example, is potentially a person, it follows that the fetus is not yet a person. It has the value of potential persons, which is to say it does not have the value and rights of an actual person. A package of seeds is not a garden of vegetables. One may value the seeds because of what they will grow to be, but they have not yet grown to be what they could grow to be. Moreover, to say the fetus is potentially a person is to say that it does not actually have the rights of a person. Potential rights are not actual rights. Potential rights are those rights that no one yet has but which someone could come to have. There is an obvious difference between the potential and the actual. There is also a difference between the potential to become a person and the potentialities of a person. Thus, when speaking of a fetus, one does not yet know who it will turn out to be. But when speaking, for example, of a person in reversible coma, we know who it is who will wake up and who is still "present" in his living, intact brain. Moreover, when one is concerned about injuring the person a fetus may become, one is not concerned about injuring a potential person, but about injuring a person in the future when that person is very actual and very real. It is like aiming an arrow where a person strictly will be known to be standing in the future when the arrow strikes earth. Experiments on fetuses can be considered as such arrows.

The issues of experimentation on fetuses, the definition of viability, and the practice of abortion turn most importantly on the rights of persons strictly. One should be concerned that their freedom is maximized to the greatest extent compatible with the freedom of others and with commonly agreed upon social goals. It is in terms of these concerns that we move to guard future persons, as well as to develop non-strict senses of 'person' which allow the rights of persons to be imputed to such individuals as infants.

IV. Euthanasia

The notion of persons strictly bears on euthanasia: the freedom to choose the circumstances of one's death. With respect to euthanasia, at least in cases where this is tantamount to assisted suicide, one is really asking whether one has good grounds to constrain the freedom of others who seek assistance in dying. Unless the person seeking assistance in suicide has undischarged duties to others (e.g., he is committing suicide to avoid paying his just debts), or unless one can make sense out of duties to oneself (which, I believe, is impossible—I could, *pace* Kant, always release myself from such duties⁹), the only justification for coercing others not to help in the commission of suicide would be some utilitarian concern. Yet, such concerns are hard to make out in cases of suffering and illness, where the person's continued life more often than not will have a negative social utility, and the ability to discharge particular debts has been eliminated by the disease rendering moot such duties to others. Thus, the burden shifts: persons seeking assisted suicide in the circumstances of an imminent painful death are free to do so unless one can justify causing a person to experience useless pain (i.e., a continuation of a painful terminal illness) by constraining others from helping that person take his life. It would take us too far afield to explore this issue in detail here. However, the point I wish to raise is plain: euthanasia should be seen in libertarian terms, thus putting the *onus probandi* on those who would justify restricting a person's freedom to kill himself, or contract to have another assist him in suicide. It should be added that legalizing assisted suicide probably would have little social impact. It was, for example, legal in Texas^{10,11} until 1973 when a version of the Model Penal Code was enacted.¹²

In conclusion, I want to stress that a person-oriented medicine must come to terms with human freedom. The issues of abortion and euthanasia concern recognizing the scope of that freedom. The legalization of abortion and consideration of the rights of a person to ask for assisted suicide bear on protecting the freedom of actual persons. With regard to euthanasia, I mean nothing more provocative than to suggest that the old Texan position with respect to assisted suicide is morally defensible. In any event, medicine is irrevocably caught up with distinctions between human biological and human personal life, between social and strict senses of person, and is, as a consequence, forced to help decide on the bounds of human freedom.

*I am very grateful to Laurence McCullough for his keen and spirited criticisms of the ancestral draft of this essay.

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MENINGOCOCCAL POLYSACCHARIDE VACCINES

Recommendation of the Public Health Service Advisory Committee on Immunization Practices

Introduction

Polysaccharide vaccines against diseases caused by *Neisseria meningitidis* serogroups A and C meningococci are now licensed in the United States. They are prepared as monovalent and as bivalent antigens. The purpose of this statement is to summarize available information on these antigens and to offer general guidance regarding their role in the control of epidemics of meningococcal disease in the civilian population of the United States.

Meningococcal Disease

Meningococcal disease is endemic in the United States and throughout the world. It caused serious epidemics approximately every 10 years from 1900 to 1945 in this country. It also regularly caused outbreaks among military recruits, which is what stimulated the development of type-specific vaccines.

During the last decade an estimated 3,000-6,000 cases a year of meningococcal disease occurred in the United States. From 1964 to 1968 and since 1972 serogroup B has been the serogroup most often isolated from patients. In 1969 through 1971 serogroup C was most common in the civilian and military populations. Serogroup A was only rarely identified. In 1971 the Armed Forces began administering group C meningococcal polysaccharide vaccine routinely to all recruits; since then, the incidence of meningococcal disease in the military has declined sharply, and serogroup C disease has been virtually eliminated.

Sulfa-sensitive serogroup B strains currently cause the majority of U.S. cases. Highest attack rates are in infants. Serogroup C strains account for about one-third of cases. Although the highest age-specific attack rate for serogroup C is also in infants, about 70% of serogroup C cases occur in persons over 2 years old. More than two-thirds of all meningococcal disease occurs in patients less than 20 years.

In recent years meningococcal disease in civilians has occurred primarily as single isolated cases or, infrequently, as small, localized clusters. Secondary cases occur more frequently in household contacts than in the general population, and appropriate antibiotic prophylaxis has been the principal means of reducing the risk for immediate contacts of cases.

Meningococcal Polysaccharide Vaccines

Three meningococcal polysaccharide vaccines, monovalent A, monovalent C, and bivalent A-C vaccine, are licensed for selective use in the United States. These vaccines are chemically defined antigens consisting of purified bacterial cell wall polysaccharides. The antigens are polymers of particular neuraminic acids with antigenic characteristics that induce specific serogroup immunity. Vaccine is administered parenterally as a single dose in the volume specified by the manufacturer. Adverse reactions to each vaccine are infrequent and mild, consisting principally of localized erythema lasting for 1-2 days. The duration of immunity conferred by each vaccine is unknown.

Serogroup A vaccine when evaluated in 62,000 Egyptian schoolchildren 6-15 years old appeared highly effective and without

any serious side effects. Its protective efficacy in children younger than age 6 has not been evaluated, and antibody responses indicate that children less than 2 years old respond less well to the antigen than do older individuals.

Serogroup C vaccine has been given routinely to American military recruits since October 1971. The more than 500,000 young adults vaccinated have had no significant adverse effects. Serogroup C vaccine has been studied in infants, preschool and school-age children, and adults. It elicited antibody in all age groups, although older children and young adults had the highest levels. This vaccine does not appear to be effective in children less than 2 years of age.

Vaccine Usage

General Recommendations

Routine vaccination of civilians with meningococcal polysaccharide vaccines is not recommended because of insufficient data on their benefits. The serogroup-specific monovalent vaccines should be used, however, to control outbreaks of meningococcal disease caused by *Neisseria meningitidis* serogroup A or C.

Vaccination may have value for some travelers planning to visit countries recognized to have epidemic meningococcal disease. Although no cases have been reported among Americans in such areas, prolonged contact with the local populace may enhance the risk of infection and make vaccination a reasonable precaution.

Vaccination should be considered an adjunct to antibiotic chemoprophylaxis for household contacts of meningococcal disease cases. This is because half the secondary family cases occur more than 5 days after the primary case, long enough to yield potential benefit from vaccination if antibiotic chemoprophylaxis were not successful.

Epidemic Control

In an epidemic of meningococcal disease due to serogroups A or C, the population at risk should be identified. It should be delineated by neighborhood, census tract, or other reasonable boundary. If there is ample vaccine, all residents in that area should be vaccinated. If not, persons expected or known to be at highest risk of disease by virtue of age, socio-economic status, or residence area should receive priority vaccination.

At the present time, requests for releasing meningococcal vaccines for epidemic control must be approved by the Bureau of Biologics, Food and Drug Administration, in consultation with the Center for Disease Control.

Contraindications

The safety of meningococcal vaccines in pregnant women has not been established. On theoretical grounds, it is prudent not to use them unless there is a substantial risk of infection.

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"For when was honey ever made with one bee in the hive..."

Thomas Hood, *The Last Man*



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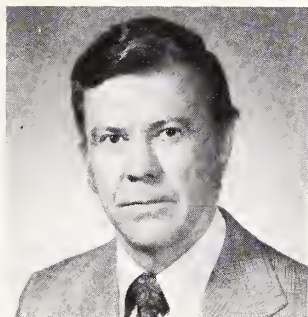
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The President's Page



One of my favorite cartoons regarding physicians illustrates a middle-aged woman peering intently at her physician's diploma on a nearby wall. In the background he is writing a prescription at his desk. The caption reads: "1949 may have been a good year for wine but how was it for doctors?"

Along with the clamor for evidence attesting to the continuing competence of their physicians, the public is now questioning the way we educate our successors. While sweeping curricular changes are in vogue, much of the new educational activity is based on untried techniques with evaluation often based on subjective faculty opinion. Perhaps our people have been sensitized by their experiences at lesser educational levels, but they are indeed questioning whether these changes were instituted to benefit the patient and the pupil, or merely to relieve the burden of an overworked and undermanned faculty. (The recent innovations using self-teaching aids, and learning at one's own pace do suggest something between Montessori and modern math.) Even our friendliest critics view the trend toward shortening medical education with concern. They express the fear that this will both exaggerate and accelerate the dehumanization of the physician and depersonalization of the patient.

The perennial observation that medical education is not particularly relevant to medical practice today cannot continue to be either dismissed as another pretentious declaration of the obvious or accepted as a description of the status quo to be defended and cherished rather than challenged. The accelerating accumulation of scientific medical data has made our style of medical education as out of date as gastric freezing and psychosurgery. Unfortunately, this is better recognized by the medical graduates than by their teachers. Although the approaches vary, the common trend is still to teach a basic core of information in both preclinical and clinical years. This educational treasure-trove is represented as the fundamental knowledge, required of all physicians regardless of their field of endeavor or expertise. The basic diet is supplemented by a varied buffet to elective offerings in order to satisfy individual interests appropriate to eventual career goals.

Why must the vast apparatus of American education persist in attempting to program its graduates with sufficient data for a lifetime of practice? Why must the hierarchy keep stuffing facts into students like the proverbial Strasbourg goose, particularly when over half the stuffing will be stale in ten years? The amount of information available and necessary for proper patient care has passed far beyond the ability of any individual to carry it around in his own personal memory bank.

We owe our students something better. The whole context of medical education must be altered to allow a different orientation. We must shift our emphasis to the skillful retrieval of information rather than its retention. Conceptual thinking and mastery of problem-solving tools are the answer to the continued information explosion. The computer has relieved the drudgery of statistical evaluation, and the numbers can become our allies. Critical evaluation of the medical literature must be stressed. If we can teach our students to analyze Milton and Shakespeare, we should be able to do as well with our own works written by lesser poets. Finally, logical and creative thinking, even in medicine, are not mutually exclusive. An atmosphere and climate should be provided wherein they are not only allowed but encouraged.

If we accept Margaret Mead's charge that we must teach our students today what nobody knew yesterday and prepare them for what no one knows yet, but what they will have to know tomorrow, our students do indeed deserve something better. Training is not education.

Guy W. Van Syckle, M.D.
President

Reflections from the Dean's Office

Robert U. Massey, M.D.

Medical school admissions policy has been the subject of several critical commentaries in the press in recent months.

Although medical schools have increased their enrollment in the past decade so that they are now admitting 15,000 students, compared with 8,760 students in 1965, the number of applicants has grown faster. There are now three students applying for each available position.

Of course this demand drives up the price of admission both in academic requirements and in dollars. The latter results more from rising costs than rising demand, but it is often difficult to separate the two kinds of inflation. The former has had some effects which are disturbing to physicians, educators, students, parents, and patients concerned about the quality of medical education and of medical care.

One effect has been the inflation of grades. Since grades, especially grades in science, are the medium of exchange in negotiating for a position in medical school, they must inevitably, in this situation, become devalued. There are simply more A's produced because more A's are required for admission to professional schools.

Undergraduate education has become a game in which the student accumulates as many hours of A in science as he can. Medical school admissions committees claim to be looking for students also educated in the liberal arts, but few premedical advisors take them seriously.

When medical schools began to require three or four years of college, their expectation was that these years would include education in both the arts and sciences, would be in fact the liberating experience which higher education claimed to be. Apparently few have noticed or cared that this is often no longer so.

Students with grade point averages of 3.8 in science and Medical College Admission Test scores over 700 enter medical school with no one enquiring whether they can write the mother tongue, or understand it, or are fluent in another language, or whether they know where they are in history, or who they are, or are more than vaguely aware of the vast edifice of western culture of which medicine is a part. That many of them are educated men and women is to their credit and the

credit of their families. Students with science grade point averages between 3.0 and 3.4 and MCAT scores in the 600's have no more than an even chance of being admitted.¹

Medical schools cannot be blamed for depending on quantifiable data to determine who shall pass their gates. In a society in which accountability for every action is demanded, it is easier to account by citing figures than by describing judgments. When anyone may ask why the committee failed to recommend X, it is best to be able to show that Y had higher MCAT scores and science grades and could hardly have been turned down. That is intended to end a difficult discussion. Of course, medicine should expect to admit the brightest and best, but more than a few of us have an uneasy hunch that this may not be the only way to do it. Furthermore, if professional schools have such power over undergraduate student behavior, perhaps they should use that power to strike a blow for education.

Intelligence coupled with virtue is what we are seeking in a physician, but that is not all. Medicine stands between the sciences and the humanities. Whether in preparation for medicine or for any other profession, students who may shape the future of western culture should understand it. Four years of liberal arts is a luxury not generally available outside of America to students embarked on a medical career. It is unfortunate that it may be wasted to acquire the price of admission to medical school rather than to acquire an education.

Steven Muller, President of Johns Hopkins University, has suggested that, at the least, a liberal education should ensure verbal and quantitative literacy, a "command of history to provide at least minimal general cultural orientation"; foundation in human biology, and "mandatory instruction for every student in a second language, to the level of full fluency."²

The return to these minimum standards for higher learning could begin with a revolution in medical school admissions requirements.

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EDITORIALS

Politics, Privacy and the Parent Locator Service: The Physician's Responsibility

Public Law 93-647¹ contains two parts—Part A which is Title XX, grants to States for services, discussed in these columns last month,² and Part B, designed to enforce the support obligations owed by absent parents to their children, locating absent parents, establishing paternity and obtaining child support. The Law, enacted by the 93rd Congress in its rush to adjournment, is a product of the Senate Finance Committee and had been rejected by the House on two earlier occasions. Its passage sought after by Sen. Russell Long, a hard-liner against the welfare system, was finally accepted by the Congress in exchange for the urgently needed Title XX legislation (Part A). Part B, usually referred to as Title IV D of the Social Security Act has never been fully considered by the Congress. No hearings were ever held on the measure by the House. In 1973, the Senate held a one day hearing at which time the proposal was opposed by the Nixon Administration and a range of outside groups, including the AFL-CIO and the League of Women Voters. Since the 1973 hearing, a DHEW study showed how under the existing welfare law, the States of Washington and Massachusetts improved child support enforcement without the invasions of privacy, punitive treatment of welfare recipients and the new layer of bureaucracy required by Chairman Long's bill.³ Similar reports have been published of improved enforcement of child support under existent law in New York, California and Michigan.^{4 5}

When President Ford signed Title IV D provisions into law, he expressed grave reservations, calling stipulations for use of the Federal courts, the tax collection procedures of the I.R.S. and excessive audit

requirements "an undesirable and unnecessary intrusion of the Federal Government into domestic relations. Further, the establishment of a Parent Locator Service in the DHEW with access to all Federal records raises serious privacy and administrative issues."⁶

The Law was scheduled to take effect on July 1, 1975, but Congress postponed the effective date until August 1 to make necessary technical amendments. On July 1, 1975, H.R. 8598 passed the House, a bill which dealt with substantive issues and did not interfere with the legitimate goals of collecting child support payments from absent parents. Amongst its provisions the bill sought to avoid unnecessary invasions of privacy, to repeal the Parent Locator Service while allowing the Secretary of HEW to supply the last known address of the absent parent from Social Security and I.R.S. files, to repeal the use of Federal courts whose dockets are overcrowded, in child support cases, and to repeal the use of the I.R.S. to collect child support.

Title IV D required as a condition of eligibility that a mother cooperate in every case, in paternity and child support actions. There were no exceptions for those situations where a mother might not wish to cooperate, in the best interests of her child, as in the specific instances of a father with a significant criminal record or severe emotional disturbance who may be given reason, upon identification, to return and harass the family. Previously, the Nixon and Johnson Administration fought the Parent Locator Service and the "cooperation" provisions after careful examination concluded that this approach would yield little and cost in excess of \$40 million.⁷ H.R. 8598 attempted to remedy the cooperation requirement by providing a good cause exception when it is deemed in the best interests of the child.

Senator Ribicoff and Senator Weicker lobbied to get H.R. 8598 reported out of Senator Long's Finance

Committee, but along with other advocates, saw it die in Committee. Finally, on August 1, 1975 amendments to Title IV D were passed by the Congress. The amendments to Title IV D were attached to H.R. 7710* (a bill concerned with tariffs on watches). Two key provisions of H.R. 8598 were included.

1. a good cause exception from the requirement of cooperation when it is determined to be in the best interest of the child. The DHEW is required to prescribe standards under which State welfare agencies would consider the child's best interests in deciding where to secure support, establish paternity or compel the cooperation of the applicant or recipient. While such standards have not yet been written,⁹ the Center on Social Welfare Policy and Law believes they should include:
 - a. the fear of physical violence, psychological harm or economic reprisal.
 - b. reasonable belief that the identity of the father will be harmful to a child born out-of-wedlock because of a father's background and predictably dangerous behavior.
 - c. a mother's reasonable chance to marry and remarry and the possibility that the father will adopt the child.
 - d. the prospect that reconciliation or marriage might be threatened if the mother "goes after" the father.
 - e. the risk that the child's on-going relationship with the father may be jeopardized by trying to collect support when he may be adjusting to marginal economic circumstances.
 - f. where the statute of limitations on paternity proceedings has expired or the likelihood of proving paternity is minimal.¹⁰
2. a limitation of access to and use of information concerning applicants or recipients of Title IV A (AFDC) now subsumed under Title XX, to purposes directly related to the administration of programs under the Social Security Act.

H.R. 7710 (now P.L. 94-88) does not include repeals of the Parent Locator Service, the role of the I.R.S. or the Federal court jurisdiction. The new Law gives the I.R.S. the power to summarily seize property of absent parents, without the opportunity for administrative or judicial review, by giving the I.R.S. the same powers it has when taxes are owed and a threat exists that collection is in jeopardy. There is no reason to grant such extraordinary powers to the I.R.S. since there is no threat to the public if due process is observed.

The information limitations are a major improvement over P.L. 93-647 but do not assure adequate confidentiality safeguards. On November 10, 1975, the DHEW explained in the Federal Register^{11, 12} that State plans under Title IV D must have the same safeguards as specified in 45 CFR 205.50^{13, 14} which cover Titles I, IV A, X, XIV, XVI, XIX and XX. The Secretary expressed the desire "to fully comply with the spirit as well as the letter of the Privacy Act of 1974."¹⁴ While he may be imbued with the spirit of the Privacy Act of 1974, the letter of the Privacy Act could be implemented immediately by Secretary David Matthews in Title XX and Title IV D by rules and regulations changes published in the Federal Register. These changes should include procedures for individuals' access to records, a process for the correction and amending of records which if denied is subject to an appeals process, mandatory educational programs for State functionaries who handle information and annual publication in the media of State systems which collect this data. Rules and regulations cannot dictate criminal penalties for violations of safeguards.

Currently, the confusing legal maze constructed by the DHEW still relies upon the ineffective welfare statutes of each State. Only Minnesota and Utah have well drawn privacy acts. As other States ponder the wisdom of writing fair information practices acts, their welfare data banks at the behest of Federal statute and regulation are accruing vast amounts of data about the individual. If safeguards catch up with accrual, recent national history does not encourage us to believe that data will be wholly expunged. Title IV D provides a window through which Title IV A and Title XX data may be exchanged between the States.² Chairman Long, an opponent of federalization of the welfare system, in Title IV D has created a structure for an early national welfare data base which cuts across jurisdictions and is monitored by inadequate safeguards.

Physicians are deeply concerned about the confidentiality of their relationships with their patients and fear increasing government controls in medicine. The confidentiality issue links Title XX, which provides important health and welfare services in Connecticut, with Title IV D, which has serious pediatric and child psychiatric implications. However, our professional fears about threats to confidentiality safeguards cannot be narrowly limited to medical matters, or they will be dismissed by the American public as self-serving and economically motivated. Only when we reach beyond these limits and speak out as concerned informed citizens responsive to governmental intrusion into the privacy of all groups

and individuals in our society, will the public attend to our special claims for confidentiality safeguards in medicine.

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Myths and the Identity Crisis of Psychiatry

The roots of psychiatry go deep in the field of medicine. They are to be found in the writings of Hippocrates and of eminent physicians of the Greek, Persian and Arabic as well as European cultures. Today, the recent advances in the treatment of mental illness, such as by psychopharmacological agents, afford evidence that psychiatry continues to be an integral part of medical practice.

Psychiatric disorders arise from the combination of a number of factors, which vary from patient to patient. In each person, the current somatic substrate of behavior is the product of the interaction of such factors as genetic inheritance, experiences during psychophysiological development from birth on, and the stresses (acute, chronic, and acute-on-chronic) to which he has been, or is, exposed.

Because many emotionally ill individuals are unable to make an adequate adjustment to society, there evolved a concern of the State for them together with a *parens patriae* responsibility. From this developed the State hospital systems which are part of the social-welfare system.

As new knowledge about psychological functioning was accumulated and as new therapeutic techniques

developed, the attention of psychiatrists came to be focused on the etiological and treatment aspects of emotional illnesses which were psychological in nature. This was especially true prior to recent acquisition of knowledge in the biology of psychiatric disorders.

Because many of these techniques can be utilized by non-physicians trained in applying them, new professional groups emerged, working under the direction of the psychiatrist. In time, the drive for independent professional status grew—as is currently occurring in the nursing population.

The utilization of these categories of manpower was, and is, to be found principally in governmental facilities which have had great difficulty in recruiting adequate numbers of psychiatrists. It became the policy of government, State and Federal, to promote these groups to meet the ever-increasing demands for care of the mentally ill.

Further, the social reform climate of the past decade or two provided a rich medium for the growth of the belief that current environmental stress of social origin was a major—and later the sole—factor in the etiology of psychiatric illness.

Thus, there emerged the "social model" to explain the etiology of mental illness. For these professionals, the removal of current stress and the resolution of current conflicts became the *sine qua non* of treatment of the emotionally disturbed. For this, highly trained physicians, that is psychiatrists, are not needed! Indeed, psychologists claim that theirs is a health profession independent of that of medicine, having exclusive jurisdiction for the treatment of patients who do not require somatic therapies.

The social turmoil of the past decade stimulated anti-establishment elements, particularly in the younger age groups. It is, therefore, not to be wondered that many younger psychiatrists became strong advocates of the social model with disregard for, and even rejection of, the medical components of psychiatric disorders.

Out of these developments arose the conflict between the partisans of the social model of mental illness and those who adhere to the medical model, with attacks by the former on the medical model advocates as mossback, self-interested individuals, attempting to preserve their traditional privileged status.

Throughout the history of medicine, etiological formulations and therapeutic techniques have been accepted until sober experience and scientific studies have led to their conversion to the category of myths. Psychiatry has not been immune to this phenomenon. In the areas in the field now dominated by the social model advocates, the same phenomenon can be

witnessed. There are extremists in every new movement. Indeed, in a recent best seller, *The Myth of Mental Illness*, a rather vicious polemic, the author, a psychoanalyst, denies the existence of such disorders as medical entities. Under this banner have rallied many of the "anti-medical" elements in and out of the mental health field.

One outcome has been the increasing attacks on psychiatry under the rubric of psychiatry's crisis of identity. In some ways, this rather glib phrase does vividly portray the conflicts in the mental health field. But the core conflict is between psychiatrists of the medical model persuasion and that of others, mainly non-psychiatrists committed to the social model. An identity crisis exists only for those psychiatrists who have embraced the latter (and many of whom elect to work in community mental health centers). The crisis—more correctly the problem—for the medical model adherents lies in the confusion arising because the therapeutic claims (? the myths) of the social model adherents are attributed to represent the positions of the psychiatric profession as a whole.

It is well known that even the most logical arguments influence not all beliefs based on strong emotions and inadequate data. Scientific studies, now appearing on the limitations of the social model as a comprehensive instrument, will provide the most effective answers. Unfortunately, for a time at least, the psychiatric profession will have to endure, though perhaps not always in silence, the barbs and arrows of misfortune due to the confusion in the public mind. In the meantime, the "medical model" psychiatrist will continue as before to utilize for the benefit of his patient those aspects of the "social model" which are appropriate to his therapy.

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The Dr. Fox Effect: A Rebuttal

A recent issue of *Connecticut Medicine* reprinted an article by Naftulin, Ware, and Donnelly entitled "The Dr. Fox Effect: An Experiment in Educational Seduction."¹ The Doctor Fox study has been quoted often in the press. I would suggest that its popularity lies more in its confirmation of a treasured belief than its validity.

The treasured belief is that student evaluations of professors have little value, that student opinion is uninformed and fickle, and that the student has neither the background nor the skill to evaluate his mentors.

On the other hand, who spends more time with the professor in a more realistic situation than his students? My own bias is that the student has something of value to say but in order to find out what he is saying, we must ask the right questions. I have explained this point in some detail elsewhere.² My present concern is addressed to the validity of this study.

The Dr. Fox study has probably already received an amount of criticism at least equal to its acclaim. Basically, the criticism is in two areas. First, the study was not an experiment. There were neither control groups nor treatment variations. Perhaps even more damaging to validity is the fact that the hypothesis tested was not addressed by the data collected. The authors state that their intent is to demonstrate that "Given a sufficiently impressive lecture paradigm, even experienced educators . . . can be seduced into feeling satisfied they have learned despite irrelevant, conflicting and meaningless content conveyed by the lecturer." They asked eight questions and none of the questions asked whether the subjects felt they had learned. It is shown by the data that many of the subjects liked Dr. Fox and were stimulated by him, but nowhere in the questionnaire or in the selected subjective responses did anyone claim that he had learned anything.

More recently, one of the authors of the original study, John Ware, joined forces with Reed Williams and conducted a more sophisticated study of the Dr. Fox effect.³ Their findings clarify the meaning of the earlier inquiry and contribute insight into the meaning of student evaluations. Ware and Williams contrasted three levels of content coverage with two levels of seductiveness in a 2 x 3 crossed design. "Dr. Fox" presented a 20 minute lecture on the biochemistry of memory under each of the six conditions. Their dependent variables included both cognitive measures and a highly reliable 18 item faculty rating scale. They found significant differences in the cognitive test scores on both the content coverage and the seduction dimension. That is, students learned more when both content coverage and seductiveness were high than they did when content coverage and seductiveness were minimal. On the other hand, the satisfaction measured showed an interaction between seductiveness and content coverage. In the highly seductive classrooms, there was a much smaller difference between attitudes toward the high content and the low content groups than there was in the low seduction groups.

The basic message which this contains for the professor-in-action is that if the substance contained in your presentation is high, your students will learn and will forgive your lack-lustre behavior. On the other hand, if your content is weak on substance, a high degree of charisma is essential to prevent disaster.

Furthermore, the study establishes teacher seductiveness as a strong influence, not only on how students feel about learning, but also on learning itself.

I find some difficulty with the term seductiveness. Doctor Fox's training in seductiveness directed him toward the following behaviors: enthusiasm, humor, friendliness, expressiveness, charisma, and personality.³ These characteristics have long been associated with good teaching. Their potency becomes more important in terms of long term learning. If teacher "seductiveness" affects both learning and liking in the short term, it should have even a more powerful effect in terms of long term learning, because liking may be crucial to the development of the persistent drive needed to get the most out of a demanding medical school curriculum. The argument in favor of adding the ingredients of humor, friendliness, enthusiasm and expressiveness to a strong basis in substance is not a hedonistic one, but a practical one. Students will learn more. Furthermore, both of these ingredients, substance and seductiveness, can be identified in appropriately designed student evaluations. Asked the appropriate questions, students can respond independently to the issues of substance and liking.

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NOTICES

YALE UNIVERSITY SCHOOL OF MEDICINE

will present a symposium

April 23, 1976

on

Care of the Non-Life Threatening Burn

KEYNOTE SPEAKER: Alan R. Dimick, M.D.
Associate Professor of Surgery
University of Alabama

The one-day symposium is designed to highlight some of the problems encountered in managing the minor and moderate sized burn, those most commonly cared for in the general hospital. Included will be discussions of the outpatient management of burns, debridement, infection control and wound closure. The role of the physician's assistant and burn nurse in the team approach will also be discussed. The program is open to all health practitioners and has Category I accreditation toward the AMA's Physicians' Recognition Award.

LETTERS TO THE EDITOR

Letters to the Editor are welcomed and will be published, if found suitable, as space permits. Like other material submitted for publication, they must be typewritten *double spaced* (including references), submitted in duplicate, must not exceed 1½ pages in length and will be subject to editing and possible abridgment.

CRMP HEALTH CARE

To the Editor: The letter to the Editor in the October *Connecticut Medicine* by Dr. Bernard S. Dignam was drawn to my attention. As a member of the State Medical Society and the Director of a Public Health Program serving a major city in our state, I would like to take issue with several of Dr. Dignam's comments.

In the light of the sheer number of individuals with elevated blood pressure who currently are undiagnosed in this state, some 10,000 in Stamford alone, the task of identifying and referring for treatment those individuals afflicted with hypertension remains a substantial one and cannot be solved solely by the individual efforts of physicians alone.

In addition, many individuals just simply do not see a physician, even if he is conscientious about taking their blood pressure and initiating treatment, when they are feeling well.

It should be emphasized that those of us who operate screening programs consider them as precisely that; a program to identify and refer for further treatment and diagnostic studies, individuals found to have elevated systolic and/or diastolic blood pressure on more than one occasion.

The numbers of individuals screened with assistance from the Connecticut Regional Medical Program runs into the tens of thousands at the present time and I know from our own experience that we have not only referred a substantial number of individuals hitherto undiagnosed or receiving inadequate treatment, but have also, in a modest way, managed to pick up some additional problems such as multifocal pvc's which necessitated rapid action and may have been instrumental in actually saving a life.

Finally, for anyone who professes to be interested in improving Public Health, Dr. Dignam should remember that Public Health does not primarily attempt to provide *Medical Care*, but rather to provide a floor of *Public Health services* that will minimize that spiraling cost of *Medical Care services* which is now approaching a hundred billion dollars and growing ever more rapidly.

Perhaps rather than bicker about the short-comings of Public Health services—admittedly understaffed and underfinanced—it would be better to recognize that both kinds of services are needed if we truly want to improve health. For one who professes to be interested in "improving Public Health," Dr. Dignam should be careful to distinguish between Public Health Services and Medical services. Both are vitally needed; in many instances both are run by the same trained professionals and deserve mutual respect rather than recrimination.

Ralph M. Gofstein, M.D., M.P.H.

Director of Health and School Health Services
City of Stamford

The above letter was referred to Dr. Dignam, who offers the following reply:

To the Editor: Dr. Ralph M. Gofstein should be congratulated on his fine analysis, possibly exaggerated, of a good blood pressure detection program. Apparently the blood pressure program is working in his area. In other areas, blood pressures are taken by



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girls in optometrists' offices, shopping centers, etc. As I stated, what is the value of this by inadequately trained amateurs? Come now, doctor, do you expect them to pick up extrasystoles (premature pvc's)?

I believe a visitor at the Public Health headquarters in Hartford became ill and no stethoscope or sphygmomanometer was available to the doctors in the department.

As to Dr's characterization of my interest in Public Health as Al Smith said 'Let us look at the record.' I was the first in Connecticut to obtain Board Certification in Preventive Medicine by examination; furthermore the incidence of TB was reduced from 4% to less than 1%; diabetic detection and influenza inoculations, polio, tetanus, etc., were successfully operated for years. Eye and ear conservation programs were run. Fluoridization and sewage were installed under my auspices.

Public Health services require professional M.D.'s who must be careful of any amateurs working under their direction. (More information is available if interested.)

If Dr. Gofstein thinks Public Health or detection devices will reduce the \$100 billion outlay (primarily to hospitals) I suggest that he read Dr. Schwartz (*American Medicine*). He is an eminent medical economist, professor at Columbia, *New York Times* writer. He will say that costs will rise as government intervention and quality increases.

Bernard S. Dignam, M.D.

Enfield, CT.

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SUMMARY OF PROCEEDINGS HOUSE OF DELEGATES—SEMI-ANNUAL MEETING New Haven—November 19, 1975

Reports and Resolutions

The House of Delegates received reports from the President, the Council, COMPAC, the AMA Delegates and the Committee on Continuing Medical Education. Also received and considered were several resolutions introduced by component county medical associations.

Principal Actions Taken

(a) **Report of the President, Guy W. VanSyckle, Danbury:** The House VOTED to accept, with commendation, the report of the President, and to refer to reference committee for hearing an appended report of the President concerning "Physician Care and Discipline."

(b) **President's Report on "Physician Care and Discipline" *:** Following a hearing on the subject report held by a reference committee, the House acted on the report by VOTING to adopt the following resolution presented by the committee:

WHEREAS: To date, no crisis has been demonstrated to exist in the field of physician care and discipline in Connecticut; and

WHEREAS: The House of Delegates of the Connecticut State Medical Society has been made aware of a continuing dialogue concerning allegations that such a crisis exists; and

WHEREAS: The House of Delegates is anxious that there be no question as to the complete dedication of physicians to insuring high quality both in patient care and physician competence; therefore be it

RESOLVED: That the House of Delegates of the Connecticut State Medical Society accept the special report of the President on "Physician Care and Discipline" and adopt the President's recommen-

dations, as amended, as the guiding policy of the Society with respect to the subject of physician care and discipline in Connecticut, and that recommendations 1-6, as amended, be implemented in conjunction with activities of the CSMS Committee on Legislation and with the office of the State Commissioner of Health.

(c) **CSMS 1971 Connecticut Relative Value Guide:**

Acting on a recommendation of the Council that publication of the RVG be discontinued, and in consideration of the New Haven Association's recommendation (resolution) that a copy of the RVG continue to be supplied to all new members upon becoming members, the House VOTED "to make copies of the CSMS 1971 Connecticut Relative Value Guide available at cost to those members of the Society who desire them, and that additional copies be printed, in accordance with anticipated demand, when the current supply on hand is depleted.

(d) **"Unified Membership":** The House VOTED to place on the table, for consideration and action at the next meeting (April 28, 1976) a recommendation of the Council "that there be unified membership in Connecticut" and a proposed amendment to the Bylaws which would make possible implementation of such unified membership. *N.B.:* "Unified Membership" means that membership in *any* unit of organized medicine is contingent upon membership in *all* units—County, State and AMA. The proposed Bylaw amendment (by adding the words in capital letters) follows:

ARTICLE IV—MEMBERSHIP

Section 1. Active Members

Par. 1. Active Membership shall be limited to those members of component associations who are certified to the Executive Director of The Society as entitled to exercise all rights of mem-

*The special Report on "Physician Care and Discipline" is published in full on page 32 as part of the "Report of the President."

bership in their county associations including the rights to vote and hold office. ACTIVE MEMBERSHIP IN THE SOCIETY OR A COMPONENT COUNTY ASSOCIATION SHALL BE CONTINGENT UPON MAINTAINING A UNIFIED MEMBERSHIP IN A COMPONENT ASSOCIATION, IN THE SOCIETY, AND IN THE AMERICAN MEDICAL ASSOCIATION. A physician eligible for Active Membership in The Society becomes an Active Member of The Society on receipt by the Executive Director of The Society of dues prescribed by The Society unless he is exempted from payment of dues as provided in Article XII.

- (e) **Mandatory Membership Requirement re Continuing Medical Education:** Following a hearing held by the reference committee on the Council's recommendation "that the standards of continuing medi-

cal education presented in a report of the Committee on Continuing Medical Education be approved to satisfy CME requirements of those component County Medical Associations that have made mandatory CME a requirement of membership" (the standards are those set by the AMA Physician's Recognition Award program), and on a resolution introduced from the floor by the Hartford County Association re "mandatory continuing medical education as a requirement for membership in CSMS," the House VOTED to adopt a subject resolution as follows: "That the House of Delegates of the Connecticut State Medical Society adopt as a mandatory requirement of membership in the Society for those members in active medical practice 150 hours of accredited continuing medical education over successive three year periods, using the standards and recording mechanism of the AMA Physician's Recognition



Pausing for a photo at the CSMS Semi-Annual meeting are, left to right, Guy W. Van Syckle, M.D., of Danbury, President of CSMS, and three award recipients. They are:

Edward F. Hecklau, M.D., of Greenwich, who received a certificate of recognition for his service as Associate Council from Fairfield County; Kenneth F. Brandon, M.D., of Hartford, was presented with a silver revere bowl for past service as Speaker of the House of Delegates and David A. Grendon, of Sharon, who was honored with a silver revere bowl for his service as Councilor at Large.

Two other physicians were not present to receive their awards. They are: Joseph S. Sadowski, M.D., of Hartford, a certificate of recognition as Associate Council from Hartford County and David S. Hastings, M.D., of Stafford Springs, a certificate of recognition honoring him as Associate Councilor from Tolland County.

The awards took place at the Park Plaza Hotel, New Haven, and were presented by Dr. Van Syckle.

Award program; and, further, that the Council be directed to present to the next meeting of the House (April 28, 1976) the appropriate wording of a Bylaw amendment that will make such continuing medical education a mandatory requirement of membership in the Society."

- (f) **CSMS Budget for Fiscal 1976:** The House VOTED to approve the budget for fiscal 1976, as prepared by the Council's Fiscal Subcommittee and recommended for approval by the Council, and to set the membership dues for 1976 at \$100.
- (g) **Establishment of Standing Committee on the Medical Aspects of Sports:** The House VOTED to approve a recommendation of the Council that a "Committee on the Medical Aspects of Sports be established as a standing committee of the House and the recommendations of the Council concerning the charge to be given to the Committee, composition, appointment of the members and chairman thereof and other details relating to activation of the Committee forthwith.
- (h) **Change of Committee Name:** The House VOTED to approve a recommendation of the Council that the name of the "Liaison Committee with the State Department of Welfare" be changed to the "Liaison Committee with the State Department of Social Services." This change was made to accommodate to the change in the State Department's designation made by the 1975 General Assembly.

Recognition of Service to the Society

- (a) *Norman H. Gardner, East Hampton:* By acclamation, the House adopted a resolution that expressed "sincere thanks and special commendation to Dr. Gardner in recognition of the valuable services he has rendered to the Society and its members over a period of many years." In addition to serving as CSMS Delegate to the AMA since 1960, Dr. Gardner has held the offices of President of the Society and Vice President of the AMA.
- (b) *Kemeth F. Brandon, Hartford:* Presented with a silver bowl in recognition of his service as Speaker of the House of Delegates, 1966-1975.
- (c) *David A. Greudon, Sharon:* Presented with a silver bowl in recognition of his service as Councilor-at-Large, 1973-1975.
- (d) *Edmund F. Hecklau, Greenwich:* Presented with a certificate in recognition of his service FCMA Associate Councilor, 1973-1974; Councilor, 1974-1975.

- (e) *Joseph S. Sadowski, Hartford:* Presented with a certificate in recognition of his service as HCMA Associate Councilor, 1974-1975.
- (f) *David S. Hastings, Stafford Springs:* Presented with a certificate in recognition of his service as TCMA Associate Councilor, 1972-1975.

Business Not Completed

The meeting of the House of Delegates was adjourned without action having been taken on two scheduled items of business as follows: (a) Progress Report, Committee on Professional Liability; (b) Recommendation of the Council re proposed appointment of committee to develop plans for CSMS response to physician strikes and job actions.

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Do You Need A Will?

For an endless variety of reasons, most Americans never take the time to prepare and keep current a will. One recent survey of individuals earning more than \$25,000 a year revealed that only one out of ten had an up to date will. The fact that so few top wage earners have a will indicates a commonly held fallacy—that one is unnecessary except in the case of extreme wealth. Many think simply using joint ownership of property eliminates the need for further provision. Unfortunately, that is not the case.

Why a Will is Necessary

If you die without a properly prepared will, intestate, your assets will be distributed according to the intestacy laws of your state. In essence, you have surrendered the right to dispose of property which has taken a lifetime to accumulate. To die intestate also causes needless delay and inconvenience for your survivors. Settlement of the estate will be much more complicated, not to mention more costly. Additionally, if minor children are involved, it may be necessary for the court to appoint a guardian who will be under constant scrutiny. Through needless negligence, the deceased may not have the final say in who will be the guardian of his minor children. Finally, the detailed process of making a will forces you to sit down and carefully examine your total financial picture. This review process is extremely important and should be done periodically even after the legal document has been written.

Once it is decided that a will is essential, attention naturally turns to the formation process. While it is possible to make your own will without professional assistance, this can be very hazardous. If a will is not properly drawn up and witnessed, it may be worthless in a court of law. Therefore, under most circumstances, it is better to hire a lawyer. A simple will is relatively inexpensive and making sure that it is properly written is well worth the price.

What Goes Into a Will?

There are several basic pieces of information that go into a will. First it must be decided how your assets will be divided. In the absence of a will, assets are distributed according to state "succession" laws. Other pertinent data include when the assets should be transferred to the heirs, how the property should be safeguarded and who will administer the distribution. Choosing an administrator is extremely important and should be given careful thought. Many people choose a trusted friend or family member, but others prefer professional administration through a bank trust department.

Avoiding Probate Court

When death occurs, the will is filed in probate court. Certain types of property need not go through this laborious procedure, however. Life insurance proceeds and jointly-held assets are the most obvious examples. Many people mistakenly think that joint ownership excludes the assets from estate taxes. That is not true. Probate proceed-

ings, which determine how the property is dispersed, and estate taxes are entirely separate. There are five basic forms of property ownership and it is important to know the differences.

- 1) Sole tenancy. This is simply property held in one name only. Without a will, distribution is determined by the courts.
- 2) Tenancy in common. In this form of ownership, two or more individuals own a specified portion of the property. When any of the owners dies, his particular share is separated from the total. It then goes through probate. In most cases, this is not the best method of multiple ownership.
- 3) Joint tenancy. This is the most common form of multiple ownership. Each of the tenants owns all of the property as opposed to a specific portion in the case of tenants in common. When death occurs, the property automatically reverts to the survivors.
- 4) Tenancy by the entirety. This form of ownership is very similar to joint tenancy, except it is available exclusively to married couples. Additionally, neither party can sell their interest in the property without the consent of the other.
- 5) Trusts and beneficial accounts. There are virtually unlimited possibilities through the creation of trusts. In many instances, significant tax savings are possible.

Relying on joint ownership can be acceptable, providing both spouses are living, when the total value of the estate is less than \$120,000 since the first \$60,000 is exempt from Federal estate taxes. Beyond the \$60,000 exclusion, there is a "marital deduction" which allows the surviving spouse to exempt half of the estate. For example, if the total value of your estate is \$150,000, \$75,000 would be exempt under the marital deduction. Then an additional \$60,000 could be subtracted, leaving only \$15,000 subject to estate taxes.

Once a will has been written, it is essential to keep it current. There are several circumstances which may make it imperative to alter the provisions. Among the more obvious are changes in financial circumstances, changes in the needs of your beneficiaries, birth of another child, disposal of property specifically mentioned in the will, divorce or remarriage, death of a beneficiary or moving to a new state. Any of these developments could render a will out of date.

Despite the brevity of the above discussion, we hope it has convinced you of the importance of making a will. In the final analysis, it is the one way that you can retain a say in the disposition of your property after death. Otherwise, state laws will impassionately determine how your beneficiaries will share in the estate. Furthermore, by failing to have a will, the costs of administering the estate will very likely be higher, thus needlessly penalizing your heirs.

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OBITUARY

Frank Leonard Polito, M.D.
1895-1975

"Majores Pinnas Nido Extendisse"

In the words of Horace: "To have spread wings greater than the nest or aspired above the paternal condition."



Frank L. Polito, M.D., a prominent surgeon of Torrington died April 12, 1975 at Holy Cross Hospital, Fort Lauderdale, Florida, after a short illness.

He was born in New York City of humble parents and when he expressed a desire to continue his education his father, a master stone mason said, in Sicilian dialect, "Va a Zappare," literally meaning, go to work. With no financial help from his family he graduated from Yale University and Yale Medical School entirely on his own resources. While an undergraduate at Yale University he was a member of the ROTC unit during World War I. After graduating from Yale Medical School he interned at Bridgeport Hospital and later set up practice in Torrington as a surgeon more than fifty years ago.

He was a former Chief of Surgery at the Charlotte Hungerford Hospital, a member of the Board of Directors of the Connecticut Medical Service, Inc. for many years, and Treasurer of the Connecticut State Medical Society from 1958 to 1959.

He was president of the Litchfield County Medical Association, and a Fellow of the American College of Surgeons.

Frank was also a member and former president of the Unico Club of Torrington. An avid bridge player he was an incorporator of the Torrington Bridge Club.

Following his retirement from his active surgical practice he spent many winters in Florida, returning to Torrington for the summer months. His hobbies were bridge, culinary achievements and puttering around his home on East Hill Road, Harwinton.

He is survived by his widow Mrs. Ann Marie Douglas Polito, a son Dr. John Polito, Chief of Surgery of the Charlotte Hungerford Hospital both of Harwinton, four sisters, Mrs. Frances Negri of Torrington, Mrs. Mary Gianfrede, Mrs. Emily D'Amico, and Mrs. Helen Farrell all of West Haven, five grandchildren and several nieces and nephews.

In the many years of our close friendship and association, it was my misfortune to have been closely involved in the three major tragedies of his life, the death of his grandson, the death of his daughter and the death of his former wife.

Two years ago he received a citation from the Connecticut State Medical Society as a member of 50 years standing. Indeed he was a Peer in our County Society.

Frank Leonard Polito, M.D., FACS

"Clarum et Venerabile Nomen"

Truly an illustrious and venerable name.

I. S. GOLDBERG, M.D.

In Memoriam

Nespor, Robert W., Harvard, 1929. Dr. Nespor was a general practitioner in the Fairfield area since 1936. During World War II he served in the U.S. Navy. He was a member of the Fairfield County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Nespor died November 9, 1975, at the age of 68.

Swirsky, Morgan Y., New York Medical College, 1939. Dr. Swirsky was an internist in the New Haven area since 1941. He was a member of the U.S. Army Medical Corps from 1944-1946, serving in the European Theater of Operations with the 62nd Field Hospital, where he received an Army commendation for service during the diphtheria epidemic in Germany during 1945 and 1946. He was a member of the New Haven County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Swirsky died November 17, 1975, at the age of 72.

PHYSICIAN PLACEMENT SERVICE

The Society maintains the Physician Placement Service as a service to the medical profession in the State of Connecticut. Opportunities for physicians to locate in Connecticut will be published as space permits and will be distributed to physicians making inquiry of such opportunities. Information should be sent to 160 St. Ronan Street, New Haven, Connecticut 06511, (203-865-6822).

Physicians wishing to establish practice in Connecticut are invited to submit a resume to be kept on file with the Society. An announcement of a physician's availability will be published in two consecutive issues of *Connecticut Medicine*.

PHYSICIANS WISHING TO LOCATE IN CONNECTICUT

Anesthesiology: Wishes to relocate to Connecticut. Roger G. Bucs, M.D., 396 Yorktown Road, Hershey, PA 17033. Tel. (717) 533-4543.

Family Practice: Diplomate, American Board of Internal Medicine. Available in July. Wishes to find opportunity to practice and to do some teaching in an office setting. Harvard Medical School. Residency at Harvard Family Health Care Program. Kenneth R. Dardick, M.D., 193 Penn Lane, Rochester, NY 14625.

Family Practice: 29 yrs. old. Available July 1976. Desires group or associate practice in medium or small community. Presently in practice. Harvard Medical School and University of Penn. Medical Center. Andrew Larkin, M.D., 4535 Larchwood Street, Philadelphia, PA 19143.

Family Practice: Available July 1976. Desires small community in group or associate practice. Graduate of Michigan State. M.D. from Wayne State and residency at Wilmington Medical Center, Delaware. Michael G. Maroldo, M.D., 304 Elsmere Street, Wilmington, DE 19804.

Institutional or Industrial Medicine: Desires position in Central Connecticut. References available. Connecticut license. Contact CSMS.

Institutional or Industrial Medicine: Desires clinic or school or industrial setting. Available on short notice. Connecticut license. Internal Medicine-pathology background. Contact CSMS.

Internal Medicine: Available immediately. Board certified. 28 years old. M.D. from S.U.N.Y. at Buffalo. Residency at Baylor College of Medicine, Houston, Texas. Robert Z. Fialkow, M.D., 2254 Stone Drive, Ann Arbor, MI 48105

Internal Medicine: Board certified. General medicine with subspecialty in rheumatology. Available July 1976. Cornell undergraduate. Downstate Medical School and residency at Strong Memorial in Rochester, NY. 28 years old. Martin W. Isenman, M.D., 758 Elmwood Terrace, Rochester, NY 14620

Internal Medicine: (Cardiology) Fellow at Yale. Completing program in July 1976. Contact CSMS for details.

Internal Medicine: Hematology/Oncology. Presently in practice. Wishes to relocate in Connecticut. Board certified. Columbia undergraduate. M.D. from Duke. Upstate Medical Center in Syracuse. Fellowship at University of Oklahoma. Group or associate practice. Thomas Twele, M.D., E-5 Oxford Towne Apts. New Hartford, NY 13413

Internal Medicine: Cardiology. Available July 1976. Completed Navy training in 1975 at Newport, Rhode Island. Columbia undergraduate. B.U. School of Medicine. Completing fellowship at Mass. General. Prefers southwestern Connecticut. Complete resume on file at CSMS.

OB-GYN: Available July 1976. Board eligible. FLEX. Medium community with group or associate practice. Trained in Peru. Internship and residency at St. John's Hospital in Detroit, Michigan.

gan. Frederico G. Rojas, M.D., 10856 Nottingham, Detroit, MI 48224.

Orthopedic Surgery: Available July 1976. 31 years of age. Presently in practice. Wishes to relocate in Connecticut. Board eligible. Desires group or associate practice. M.D. from Albert Einstein College of Medicine. Residency at the same. Herbert I. Hermele, M.D., 632 Rockwood Road, Columbia, 29209.

Orthopedic Surgery: Available in June 1976. Prefers to associate with one or more orthopedists. Presently in U.S. Navy. 32 years old. Board eligible. Brown and Georgetown trained. Detailed resume on file. F.P., M.D., c/o CSMS.

Pediatrics: Board eligible. Available June 1976. Albany Medical College and Duke University Medical Center. Desires group practice near the coast. Richard E. Carroll, M.D., Box No. 3841, Duke Hospital, Durham, NC 27710.

Pediatrics: Available August 1976. Wesleyan; Yale Medical; Fellowship at Rhode Island Hospital. 2 years active duty in the U.S. Navy. Thomas Etkin, M.D., 175 Lloyd Avenue, Providence, RI 02906.

Internal Medicine: Available September 1976. Special interest in liver disease. Johns Hopkins trained. Board eligible. Group or institutional type practice. 29 years old. Theodore G. Rose, Jr., M.D., 1112 Montecito Drive, Los Angeles, CA 90031.

Internal Medicine (Cardiology): AOA, ABIM, 30 years old. Married. Completing Fellowship at N.Y. Hospital-Cornell June 1976. Skilled in invasive and non-invasive techniques. Howard C. Rothman, M.D., 435 East 70th Street, NY 10021.

Internal Medicine (Hemat/Oncol): Board eligible. 47 years old. Group, associate or institutional practice desired. Trained in Indonesian Medical School and at several U.S. Medical Centers including Fellowship at Brookdale Hospital, NY. Frederick S. Tan, M.D., 660 E. 98th St., Apt. 12-H, Brooklyn, NY 11236.

Internal Medicine: General medicine and/or nephrology. Presently in Fellowship program at Westchester City Medical Center. Available July 1976. 33 years old. Ashraf S. Noorani, M.D., 5 Westview Avenue, #2, White Plains, NY 10603.

Internal Medicine (Pulmonary Disease): Available July 1976. 30 years old. Certified in Internal Medicine. University of Michigan trained. Daniel Markowitz, M.D., 785 Skynob Dr., Ann Arbor, MI 48105.

Internal Medicine (General): Available July 1976. 29 years old. Johns Hopkins and St. Louis University. Board eligible. Group or associate practice. Stephen F. Wetherill, M.D., 11955 Charter Oak Parkway, St. Louis, MO 63141.

OB/GYN: Available July 1976. 31 years old. Jr. Fellow ACOG. Group or associate practice. Experienced in laparoscopy, colposcopy and fetal monitoring. Write T.P.M.

Ophthalmology: 30 years old. FLEX. through New York State. Available July 1976. Completing residency at Catholic Medical Center in Brooklyn. G. Dastgir, M.D., 614 Troy Avenue, Brooklyn, NY 11203.

Ophthalmology: 39 years old. Connecticut license. Board eligible. Presently in practice. Available with short notice. Prefers solo practice. Write G.J.G.

Ophthalmology: 33 years old. Board eligible. Available July 1976. Presently a Fellow at Good Samaritan Hospital, Portland, Oregon. Interned at the Albany Medical Center. Group practice. Irvin L. Handelman, M.D., 4445 S.W. 91st, Portland, OR 97225.

Ophthalmology: Connecticut license. Available March 1976. Board eligible. Presently completing residency program in Connecticut. Contact CSMS, S.B.H.

Ophthalmology: 29 years old. Available July 1976. Presently completing residency program at Jefferson Medical College in Philadelphia. Group or associate practice. Alan L. Schein, M.D., 119 Upland Terrace, Bala Cynwyd, PA 19004.

Orthopedics: 32 years old. Available June 1976. Board eligible. Presently in U.S. Navy. Georgetown trained. Write F.P., M.D.

Pathology: Now available. 29 years old. Board eligible. Presently chief resident at DePaul Hospital, St. Louis. First year of residency done at St. Raphael's in New Haven. Nadia O. Metwalli, M.D., 8147 Briarhaven Trail, Apt. 201, St Louis, MO 63123.

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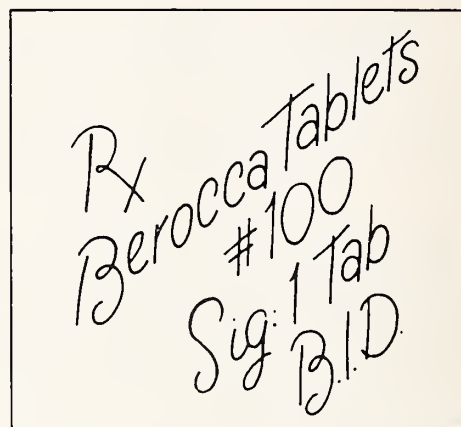
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Cerebrovascular Disease: A Brief Overview

William S. Woodfin, M.D.

Abstract—Knowledge of the mechanisms that produce stroke is essential for the prevention and care of this common disorder. Correction of factors such as hypertension, hyperlipidemia, and cigarette smoking in the stroke prone individual; careful search for remediable medical and surgical conditions imitating or underlying completed stroke; and sound basic medical care in the patient recovering from stroke offer a positive approach to a matter that has been viewed with excessive pessimism.

Cerebrovascular disease is the third leading cause of mortality in this country and is the most common affliction seen by neurologists.¹ Its most characteristic clinical picture is the "stroke syndrome"—a relatively focal neurologic deficit evolving over a relatively brief period of time. The clinical signs result from dysfunction of neural tissue deprived of a normal blood supply. This dysfunction may be transient or permanent depending upon the severity of ischemia and status of the collateral circulation.

Loss of effective cerebral blood supply may have a systemic etiology, but more commonly results from disease directly affecting the vessels and heart. The involved vessels may be extracranial, intracranial, or both from the aortic arch to the small penetrating vessels of the brain.

Cerebrovascular disease is most practically considered under the headings of thrombotic, embolic, and hemorrhagic etiologies. Thrombotic disease comprises approximately 60-70%, embolic about 10%, and hemorrhagic about 20-30% of completed strokes. Hemorrhagic disorders include bleeding directly into the subarachnoid space as with aneurysm and arteriovenous malformation. (Primary subarachnoid hemorrhagic) and bleeding into the substance of the brain which may eventually reach the CSF by dissection into the subarachnoid space or ventricles (Secondary subarachnoid hemorrhage) as with hypertensive intracerebral hemorrhage. The last is approximately twice as common as hemorrhage from aneurysm and arteriovenous malformation combined.¹

Thrombotic Cerebrovascular Disease

Atherosclerosis is the cause of thrombotic stroke in the overwhelming majority of cases. Relatively

rare non-atherosclerotic causes of thrombotic stroke include: hyperviscosity syndromes such as polycythemias, hemoglobinopathies, dysproteinemias, and platelet disorders; hypercoagulable states associated with carcinoma and oral contraceptives; arteritic diseases including syphilis, temporal arteritis, Takayasu's disease, local infections, and the connective tissue diseases; migraine; and venous thrombosis due to infection and volume depletion. These and other non-atherosclerotic causes of stroke as discussed by Levine and Swanson² merit serious consideration as applied to the young stroke victim or to the older patient with symptoms suggesting such diseases.

Atherosclerosis may produce stroke by several mechanisms. The most widely discussed has been thrombus formation causing stenosis or occlusion of vessels. This may take place intracranially in any artery but the most commonly afflicted clinically is the middle cerebral or one of its branches. Extracranially the most common site is at the level of the carotid sinus in the internal carotid artery.

Recent findings³ suggest that stenosis and occlusion of the large extracranial vessels may, however, play only a qualitative role in the production of stroke. Collateral circulation via the external carotid or across the Circle of Willis probably renders stenosis and gradual occlusion of large vessels innocuous in most cases. Evidence comes from the extremely poor correlation of angiographic and clinical findings in stroke.⁴ Perhaps more important is the embolization of fibrin, platelets, and cholesterol from the developing thrombus in a large neck vessel. These emboli would be apt to cause infarction past the Circle of Willis where there is no effective collateral circulation.

Though the mechanisms by which arteriosclerosis cause stroke are still debated, factors leading to atherosclerotic brain disease have become more clearly identified. Coronary and cerebral atherosclerosis almost always occur concomitantly.⁵ Evidence of the former, therefore, identifies a stroke prone individual. Of the general factors that predispose to atherosclerosis, hypertension is by far the most important in cerebrovascular disease.⁶ Cigarette smoking, serum lipids, and blood glucose bear a lesser relation.

In most people cerebrovascular atherosclerosis remains asymptomatic. Others may experience so-called "Transient Ischemic Attack" (TIA) or completed stroke. The TIA represents focal neurologic dysfunction from which the patient makes a full clinical recovery. It may result purely from physio-

DR. WILLIAM S. WOODFIN, Instructor, Department of Neurology, Yale University School of Medicine.

logic dysfunction of ischemic neural cells or from frank destruction of a number of neural cells that are so few as to leave no ultimate clinical deficit. The average TIA lasts only a few minutes but may persist for hours. The maximum length is arbitrarily set—usually at 12 or 24 hours.

The implication of TIA for patients is that in about one-third completed stroke will eventually occur. About 75% of patients who will experience completed stroke have only one or two warning attacks.⁷

TIA involving the carotid (anterior) circulation is unequivocally distinguished from vertebro-basilar (posterior) involvement only by a history of transient monocular blindness, *amalosia fugax*, which is a rather rare sign. However, purely unilateral symptoms such as hemiparesis, hemisensory disturbance, and dysphasia strongly imply anterior involvement. Posterior circulation involvement is suggested by bilateral symptoms such as crossed motor and sensory signs and by symptoms of brainstem and cerebellar origin such as diplopia, true vertigo, and ataxia. It was formerly felt that the prognosis for avoiding eventual stroke was better in posterior TIA. This impression is probably not correct and may have resulted from confusion of “dizziness” of non-vascular origin with TIA.

Certain factors in the history will strongly imply that a completed stroke is on a thrombotic basis. These include a history of TIA in approximately 80% and a stuttering onset of symptoms over a period of hours or several days. Frequently, the stroke occurs during sleep.

The most common syndromes of completed infarction are anatomically diagrammed and succinctly explained in the chapter by Fisher, Mohr, and Adams in *Harrison's Textbook of Medicine* to which all readers are referred.⁸ The most common by far is that of the middle cerebral artery territory. Infarction in the anterior cerebral artery territory is less common and is distinguished by weakness in the leg which is greater than in the arm. Infarction in the posterior cerebral artery territory is distinctly less common. Probably the most common areas involved in posterior circulation infarction are the midbrain and lateral medulla. Infarction in the latter produces vertigo, nausea, vomiting, ipsilateral cranial nerve disturbances, and contralateral pain and temperature impairment over the body among its various other signs. In general, posterior circulation syndromes are distinguished by cranial nerve involvement, crossed motor and sensory signs, and cerebellar involvement. The importance of distinguishing specific vascular territory syndromes is in differentiating stroke from other causes of cerebral disease.

Disturbances of higher cortical function resulting from thrombotic infarction are also generally of a focal nature. The most commonly recognized are the aphasias of dominant hemisphere involvement and the apraxias of parietal lobe dysfunction. Atherosclerosis almost never causes global dementia as its only clinical manifestation and should not be diagnosed in the demented patient without a history of step-like focal neurologic defects suggesting past infarctions that in sum have destroyed a significant amount of brain. Dementia without focal deficit is most commonly due to Alzheimer's disease.

In the patient with hypertension atherosclerosis may produce small circumscribed infarcts in the deeper areas of the brain. These may be asymptomatic or associated with several specific clinical syndromes.⁹ If extensive, these lacunar infarctions may lead to dementia and, rarely, form an exception to the above rule that dementia on an atherosclerotic basis presents with a history of focal deficit.

Embolie Cerebrovascular Disease

Infarction from embolism may be very difficult to distinguish from thrombosis. It tends to affect a younger population and there is rarely a history of premonitory attacks. The deficit tends to appear suddenly and fully rather than in step-like fashion.

Embolism is particularly suspect in the presence of cardiac disease and in the absence of a history of hypertension. The most common contexts are those of chronic atrial fibrillation and post myocardial infarction. In the last situation embolism may occur in the acute period or up to years afterward. Bacterial endocarditis, prosthetic cardiac valves, and atrial myxoma are less common sources of emboli.

Emboli from sources other than the heart include: fat, usually following major orthopedic trauma; air, usually related to surgery; tumor; and paradoxical, in the presence of pulmonary emboli with the resultant pulmonary hypertension producing a right to left shunt. This last situation must be considered as a possible mechanism of stroke in a patient with known thrombophlebitis.

Hemorrhagic Cerebrovascular Disease

The distinction between this and non-hemorrhagic stroke often has important investigative and therapeutic implications. Sometimes the distinction can be impossible, but there are usually suggestive clinical features that can often be confirmed by CSF examination or contrast study.

Hypertensive Intracerebral Hemorrhage

This is the most common type of hemorrhagic stroke. About 85% of patients with intracerebral bleed have a history of hypertension. Among the entire hypertensive population, however, atherosclerotic

thrombosis is still a far more common cause of stroke.

The bleeding originates from small penetrating vessels and is into the substance of the brain. Small aneurysms are sometimes found on these vessels and at other times small AVMs may be found. The latter are seen in non-hypertensive individuals and may explain why a history of hypertension is unobtainable in a number of cases of intracerebral bleed.

The presentation is frequently with sudden onset of headache, nausea, and vomiting accompanied by progressive neurologic signs as the blood dissects and distends tissues. In 70-90% the blood pushes its way into the ventricles or subarachnoid space to produce bloody CSF. Meningismus and subhyaloid hemorrhage may result, but these are less common than in ruptured saccular aneurysm.

The most common site of hemorrhage is in the area of the basal ganglia where proximity to the internal capsule may produce a hemiplegia identical to that of thrombotic infarction. Other common sites are the pons, where bleed is almost uniformly fatal, and the cerebellum. Cerebellar bleed is characterized by severe nausea and vomiting with inability to stand or walk even when consciousness and power are normal. Recent studies^{10,11} suggest that its prognosis might be improved by surgery. If additional experience supports this, the recognition of cerebellar hemorrhage in its early stages will be mandatory.

Aneurysm and Arteriovenous Malformation (AVM)

Saccular aneurysm, also called congenital and berry aneurysm, develop at the junction of the large arteries in the subarachnoid space at the base of the brain. They are unrelated to hypertension and represent a defect in the arterial wall that must develop over a period of years as they are almost never found at routine autopsy in children. Most are found in the carotid circulation with about 10% involving the vertebro-basilar circulation. 20% of aneurysm patients have aneurysms in at least one other intracranial site.

An aneurysm is rarely symptomatic unless it ruptures. Exceptions include some internal carotid-posterior communicating aneurysms that compress the 3rd cranial nerve and very large aneurysms that produce a mass effect. Many aneurysms may produce transient headache and meningismus from a small leak, "sentinel bleed," some days to months before a massive rupture.

When rupture occurs the picture is usually one of severe headache with at least some disturbance of consciousness. Meningismus and subhyaloid hemorrhages are particularly common since most of the bleeding is directly into the subarachnoid space at the base of the brain. There may be no focal neurologic signs unless there is spasm of neighboring cerebral vessels causing

ischemia or unless there is significant intracerebral dissection of blood.

Bleeding from AVM tends to involve a younger age group with a maximum incidence in the first few decades compared to the fifth and sixth for saccular aneurysm. Seizures, headache, and episodes of transient ischemia are more common, though less specific, signs of AVM than is hemorrhage. Also, the probability of initial and repeat bleed from AVM is considerably less than from aneurysm.¹²

The Physical Examination in Cerebrovascular Disease

Certain aspects of the exam should be stressed. Blood pressure should be taken in the supine and standing positions to evaluate for orthostatic effects. Values in both arms should be compared to check for a possible subclavian steal syndrome. Palpation of the peripheral pulses may provide information concerning peripheral atherosclerosis, embolic disease, aortic coarctation, and subclavian steal.

Carotid bruits are best heard when the patient is asked to hold his breath. Their presence may afford the only clue of extracranial carotid disease, but they can also be falsely localizing. A bruit may originate from a diseased external carotid segment in the presence of normal common and internal carotid segments. Occasionally, a bruit is heard over a normal vessel due to increased blood flow or over a completely occluded carotid.¹³

Meningismus may be the first indication that a stroke is hemorrhagic. Normally a patient should be able to touch chin to sternum without opening his mouth. In some patients limitation of motion due to cervical spondylosis may be impossible to differentiate from true meningismus. Limitation of lateral rotation favors the former.

Auscultation over the orbits and skull may reveal a bruit from an AVM or from a stenotic lesion at the carotid siphon. The bruit may be very localized.

Differential Diagnosis

It is essential to differentiate stroke from neurologic entities more amenable to medical and surgical intervention. Avoidance of therapeutic error depends additionally on differentiation of thrombotic, embolic, and hemorrhagic stroke.

Potentially remediable problems often confused with stroke include the extra-axial problems of: epidural hematoma, in which a history of trauma and the radiologic finding of temporal bone fracture is almost invariable in the adult; subdural hematoma, where headache and lethargy out of proportion to focal neurologic signs are common; and meningioma, which usually involves a history of slowly progressive symptoms. The confusion from meningioma comes when its only symptoms have been those of transient ischemia

caused by diversion of the blood supply or by compression of underlying brain.

Meningiomas and the intra-axial entities of abscess and slowly developing tumors can be confused with vascular disease if they present abruptly with subclinical seizure activity or with a post-ictal paralysis (Todd's) in which the history of the convulsion has been missed.

Glioblastoma and metastatic tumor to the brain can produce rapidly evolving step-like symptoms that imitate thrombotic stroke. Their diagnosis, unfortunately, is more of prognostic than therapeutic importance as they are virtually impervious to existing therapy.

Items in the differential which require specific medical therapy are: infection, including endocarditis, meningitis where arteritis may produce infarction in a major vascular territory, sepsis with cerebral venous thrombosis, ruptured mycotic aneurysm, and, less commonly today, syphilitic arteritis; metabolic disorders such as hypoglycemia, uremia, and hepatic failure in which focal signs may appear due to the unmasking of subclinical cerebral defects; connective tissue disorders; and hypertensive encephalopathy. The last is differentiated by the exceedingly high blood pressure, eye findings, and paucity of focal signs relative to the disturbance in sensorium.

In the elderly population neurosensory problems are often too readily attributed to cerebral atherosclerosis causing such potentially correctable problems as inner ear disturbance, orthostatic hypotension, anemia, and cardiac arrhythmia to go untreated. In middle-aged patients vasovagal syncope, seizures, and migrainous phenomena unaccompanied by headache may be mislabeled as TIA. In the younger population hemiplegic and basilar migraine are often initially misdiagnosed.

Space limits additional discussion of the differential. The emphasis here has been on the potentially remediable entities that may imitate stroke.

Laboratory Evaluation

A routine CBC may show polycythemia or anemia or suggest an underlying problem such as pulmonary insufficiency or bacterial endocarditis. An elevated ESR may suggest infection, temporal arteritis, or other less common arteritides.

Routine chemistries are necessary to rule out unsuspected metabolic disorders. Serial evaluation of electrolytes may give evidence of inappropriate ADH secretion common to various cerebral insults.

Lipoprotein electrophoresis evaluates for possible hyperlipidemia. Serologic testing is necessary to evaluate for connective tissue disease and CNS syphilis.

Blood gases should be done in addition to the standard chest film in the acute stroke patient suspected of borderline pulmonary function. Ischemic brain is particularly susceptible to hypoxia.

Approximately 50% of patients over 50 years old will have a calcified pineal visible on plain skull film. A shift from the midline of greater than 2 mm. suggests a mass lesion such as tumor or clot or brain edema secondary to infarction. Occasionally, aneurysm, AVM, and atherosclerotic vessels will show some calcification.

The EKG may show occult myocardial infarction. Cerebral infarction alone, however, frequently produces transient EKG changes that may be confused with primary cardiac abnormalities.

The EEG is more apt to show abnormality with hemispheric than with brainstem stroke. It may show focal or diffuse slowing which tends gradually to return toward normal. It is important in evaluating for seizure activity which may complicate 10-20% of strokes.

Brain scanning should be done on admission and one to four weeks later. Pickup for cerebral infarction is around 20% at one week, 80% at three to four weeks, and diminishes thereafter.¹⁴ With tumors and intracerebral hemorrhage, on the other hand, the scan will frequently be positive on admission. Among tumors the highly vascular types such as meningioma and glioblastoma are most likely to be positive. About 80% of subdural hematomas will eventually show on scan, but rarely before one week. A high percentage of AVMs will be positive particularly if near the cortex and greater than 2 cm. in diameter. The brain scan is of little direct value in brainstem infarction and aneurysm.

Lumbar puncture is of primary value in identifying hemorrhage and infection. It is indicated only when CSF exam might answer a specific diagnostic question and should not be done routinely. In the presence of signs of increased intracerebral pressure such as papilledema or where tumor or clot is suspected, it is best deferred pending contrast studies.

If the CSF is bloody a portion should always be centrifuged. The absence of xanthochromia in the supernatant suggests that the blood is due to a traumatic puncture unless the puncture has been done within several hours of a bleed before xanthochromia has had time to develop.

In the acute evaluation of stroke cerebral arteriography is best avoided particularly if the history and exam strongly suggest a thrombotic etiology. Acutely, arteriography is of most value if one suspects subdural hematoma or for the aneurysm patient with little functional impairment for whom early surgery might be a consideration. Later, it is of value only if there is a reasonable expectation that the findings will result in definite medical or surgical therapy.

Computerized axial tomography is proving one of the most revolutionary advances in neurologic diagnosis. It has the advantage of avoiding the morbidity that

may go with puncturing the meninges or arteries and usually readily differentiates among infarction, intracerebral hemorrhage, tumor, and subdural hematoma.¹⁵

Therapy

Anticoagulation will diminish the incidence of TIA but there is no convincing evidence that it will decrease the incidence of subsequent thrombotic stroke.¹⁶ It should never be undertaken in completed stroke except possibly in embolic disease where it may diminish additional clot formation at the source. The danger is in producing extensive hemorrhage at the site of a fresh infarct or bleed. There is also insufficient evidence that antiplatelet agents and vasodilators are of any benefit in cerebrovascular disease.

The value of steroids awaits additional controlled studies.¹⁷ Cerebral edema due to minor infarction is probably best managed by judicious limitation of fluids. In cases of more marked swelling with threatened herniation steroids are often employed alone or with hyperosmotic diuretics such as mannitol and glycerol. The latter offer the advantage of much prompter onset of action and the disadvantage of possible rebound edema some hours later.

There seems to be no role for low molecular weight dextran, carbon dioxide, and vasodilators in the management of stroke. It is not clear, in fact, if one should attempt to increase or decrease total and local cerebral blood flow following infarction.

The Joint Study of Extracranial Arterial Occlusion suggests that surgical therapy may offer advantages for the treatment of extracranial lesions producing transient neurologic deficits.¹⁸ The great variable here is the skill of the surgical team with endarterectomy and post-operative care. In acute stroke surgical revascularization should not be attempted as it is apt to convert an ischemic infarct to a more extensive hemorrhagic one.

In spite of large studies,¹⁹ the choice between medical and surgical therapy for aneurysm and the precise timing of arteriography and surgery remains very difficult. Prognosis seems to be related more to the patient's functional status post hemorrhage than to the type of therapy. Overall long term survival appears greater in surgically treated patients, but the morbidity is higher in this group. Potential complications of epsilon amino caproic acid seem to make its use highly questionable unless definite efficacy can be consistently demonstrated.²⁰

Surgery is a less frequent consideration in AVM as location and size render only 10-20% operable and as the incidence of rebleeding is much lower than with aneurysm. A few can be partially embolized via catheterization.

The most important requirement of the acute stroke patient is good basic medical care. This involves meticulous attention to pulmonary and GU function, fluid intake, electrolyte balance, the skin, and to other associated problems better handled by the hospital oriented internist or general practitioner than by the neurologist. Anticonvulsants need not be employed unless the patient demonstrates clinical or electrical seizure activity. Dilantin should be given only orally or intravenously as intramuscularly it binds to muscle proteins and is irregularly absorbed. Transient hypertension for the first few days following infarction is common and usually is not treated acutely in thrombotic stroke. In hemorrhagic stroke, however, very judicious lowering of pressure may diminish additional bleeding.

Rehabilitation should begin within days of the acute episode with emphasis upon range of motion exercises in the paretic limb to minimize painful stiffness and contractures. Stressing a maximum of self-help will usually speed the patient's reintegration back into family and social life.

Prognosis

The acute mortality in thrombotic stroke is about 20-25%. Prognosis is difficult to determine in the first few days but is related to such factors as: age of patient, extent of functional disability, level of consciousness, hypertension, and co-existing heart disease. If aphasia does not begin to show improvement within the first 2 to 3 weeks prognosis for speech is poor. Hemiparesis may persist longer and yet ultimately show marked improvement, while hemisensory loss may persist for months or years and ultimately resolve.

Mortality and morbidity are higher for embolic stroke. For intracerebral hemorrhage the immediate mortality is 70-75% but level of recovery for survivors is often high.

In those surviving an initial stroke, ultimate cause of mortality is about equally divided between recurrent stroke and myocardial infarction. As to quality of survival in hemiplegia, a study of more than 710 patients surviving more than 2 months post stroke showed that half eventually achieved self care and, if under 65, survived for an average of 6 years.²¹

For aneurysm, mortality from the first clinically diagnosed bleed is 10-15%. For a second bleed it is approximately 40%. The greatest risk of rebleeding is in the first week. This risk levels off after one month.¹²

Prophylaxis

Hypertension is the most significant remediable condition predisposing to stroke. Its careful control significantly reduces risk of initial and recurrent stroke. In a study of post thrombotic stroke victims followed for 2 to 6 years, the mortality was 26% in the

49 treated hypertensives versus 46% in the 48 untreated. Stroke recurred in 20% of the treated compared to 44% of the untreated. One death in the first group and 7 in the second were due to recurrent stroke. For patients over 65, however, there was no real difference. The author emphasizes the necessity of strict blood pressure control and feels that the fear of producing stroke secondary to iatrogenic bouts of hypotension is ungrounded.²²

Perhaps the greatest opportunity of decreasing morbidity from aneurysm is in recognition of the "sentinel bleed" that occurs in almost half of patients who eventually have a massive rupture. A timely LP done on the non-headache prone patient who suddenly develops severe headache with or without meningismus may reveal blood and lead to arteriography and prompt operation under conditions in which operative morbidity and mortality would be minimal.

The most practical approach to stroke overall would seem to be correction of factors such as hypertension, hyperlipidemia, and cigarette smoking in the stroke prone individual; careful search for redemiable medical and surgical conditions imitating or underlying completed stroke; and sound basic medical care in the patient recovering from stroke. This offers a positive approach to a matter that has been viewed with excessive pessimism.

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Renal Transplantation as Definitive Therapy for Endstage Renal Disease

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Abstract— The results of renal transplantation have improved because of reliable methods of kidney preservation, experience with immunosuppression, and better methods of pre- and postoperative care. Of 61 recipients of kidney transplants performed at Hartford Hospital and followed from four months to four years, 94% are alive and 70% have functioning grafts. Rehabilitation was possible for 85% of recipients of successful transplants in spite of complications due to immunosuppression.

Renal transplantation has evolved over the past decade from an infrequent and complex research endeavor to a common, clinically applicable procedure. The success rate has reached a level at which transplantation is preferred over chronic hemodialysis therapy for most good-risk patients. This paper will present the results of a renal transplantation program in which the main emphasis is on the provision of transplantation as a clinical service.

Methods

Most patients with endstage renal function, who were candidates for hemodialysis therapy, were considered suitable for transplantation. Exceptions were patients with advanced age or those who had several medical problems in addition to renal failure. Diabetes mellitus, collagen disease, heart disease, or previous carcinoma¹ were not usually contraindications to transplantation.

Sixty percent of the recipients had chronic glomerulonephritis. Other renal diseases were hereditary nephritis, chronic pyelonephritis, polycystic renal disease, nephrosclerosis, diabetic nephropathy, medullary cystic kidneys, primary amyloidosis and lupus nephritis.

Patients having a focus of chronic infection, such as pyelonephritis, or renin-dependent hypertension, underwent bilateral nephrectomies prior to transplantation. Other selected prophylactic measures included

gastric surgery for peptic ulcer disease and occasional transurethral resection of the prostate for benign prostatic hypertrophy.

Potential recipients awaiting transplantation received hemodialysis two or three times per week at several centers. A treatment on the artificial kidney always preceded a transplant operation within 24 hours. Recipients were chosen for a particular cadaver kidney on the basis of prospective tissue typing. A lymphocytotoxic cross match between recipient serum and donor lymphocytes was performed in every instance. Mixed lymphocyte cultures were also performed when living related kidney donors were available.

Cadaver kidney donors were patients with good renal function who had irreversible brain damage, usually from trauma, and whose respirations were entirely supported by a respirator. Their ages ranged between one and 45 years. Excluded were homicides, patients with a systemic infectious disease, a history of hypertension, carcinoma (other than primary brain cancer), and long-standing diabetes mellitus. Permission to remove the kidneys was obtained from the next of kin and from the medical examiner in cases under his jurisdiction. The kidneys were removed in the operating room after discontinuation of respiratory support and cardiac arrest, or with circulatory and respiratory support maintained in cases in which the patient had been pronounced dead on the basis of brain death.²

All cadaver kidneys were preserved on a preservation apparatus using hypothermia and pulsatile perfusion of cryoprecipitated plasma, after the method of Belzer.³ The perfusion characteristics permitted physiologic evaluation of the kidneys prior to transplantation, time for tissue typing procedures for patient selection, and time for patient preparation.⁴

Maintenance immunosuppression consisted of the combination of azathioprine and prednisone as described by Najarian and Simmons.⁵ Intravenous methylprednisolone and irradiation of the graft were added as therapy for rejection episodes. Cyclophosphamide was used in place of azathioprine in patients who developed liver enzyme abnormalities.

All renal transplants were placed in the retroperitoneal pelvic area, and the renal vessels were anastomosed to the iliac vessels. Kidneys with multiple renal vessels were also used with anastomoses by several

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methods.⁶ Transplant ureters were implanted into the bladder by way of a cystotomy, utilizing an anti-reflux submucosal tunnel. All wounds were irrigated with antibiotic solutions, as described previously.⁷

Results

A total of 71 renal transplants in 67 patients were performed as of January, 1975. Sixty-one of the recipients have been followed for four months to four years and comprise the data for this report. Forty-four (70%) of these patients have functioning grafts. Four patients have expired, giving a patient survival of 94%.

There were 13 recipients of living related kidneys, and 11 (85%) of them continue to have functioning grafts. One of these patients was transplanted in March, 1971. None has had a serious complication, all have excellent renal function, and all are fully rehabilitated. The two patients who rejected the transplants are alive on hemodialysis therapy.

Fifty-one transplants were performed with cadaver kidneys in 48 patients, and 34 (67%) of the kidneys continue to function. A total of 36 cadaver kidney transplant recipients have been followed for a minimum of one year, and 23 (64%) have functioning grafts. Of those patients who rejected the graft, all returned to hemodialysis therapy and are awaiting retransplantation.

Nineteen of the 61 recipients were poor-risk patients, as defined by Simmons *et al.*⁸ Sixteen of them were 45 years of age or older; two were juvenile-onset diabetics, and one was an adult-onset diabetic. All four deaths occurred in poor-risk patients, and all were recipients of cadaver kidneys. Respiratory infection was the cause of death in three of those patients, and hemorrhagic pancreatitis was a major contributing cause in the fourth death.

Pneumonia occurred in six other patients, and all were successfully treated. Two patients probably developed infected polycystic livers, and both were controlled with prolonged antibiotic therapy. Less serious infectious complications were urinary tract infections, cytomegalovirus infection, and three cases of perianal abscess. There were seven urologic complications, all partial ureteral obstruction, and each was successfully corrected by reimplantation, ureterolysis or ureteropyelostomy. Pelvic lymphoceles developed in five patients, and all were treated by intraperitoneal marsupialization,⁹ without serious complications. Steroid-induced diabetes mellitus developed in nine patients, and seven patients have required insulin therapy. Cataracts have developed in three patients, none yet requiring surgery. Other infrequent complications were azathioprine hepatitis, psychiatric problems, tertiary hyperparathyroidism, and persistent

hypertension. There were no episodes of gastrointestinal hemorrhage, no ureteral or bladder closure leakage, no wound infections, and no renal vessel thrombosis.

The most serious non-fatal complication has been aseptic necrosis of bone, especially of the femoral head. This has occurred in five patients, all of them recipients of cadaver kidneys, and all having undergone treatment for at least one rejection episode. Three of these patients have had successful bilateral total hip arthroplasties. One patient may require a knee prosthesis, and one has only mild symptoms.

Cadaver kidney preservation by the Belzer method permitted satisfactory preservation for a mean of 26 hours. Six kidneys were not transplanted because of poor preservation characteristics. Of 56 transplanted kidneys, 45 (80%) had immediate function, five had delayed function, and four kidneys never functioned. Rejection was superimposed in ischemic injury in two of the latter kidneys, and two had hyperacute rejection.

Discussion

Our goal has been to achieve a successful renal transplant for patients with endstage renal disease, while keeping disabling complications and mortality equal to or less than that of chronic hemodialysis therapy. A large percentage of cadaver kidney transplants makes this goal more difficult to achieve. However, about 80% of potential renal transplant recipients have no living related donors available, and must rely upon the more difficult and less successful cadaver kidney transplant. The published results of the Transplant Registry¹⁰ and of other institutions^{11, 12} indicate a one-year mortality in recipients of cadaver kidneys of about 30%. This is a higher rate than the annual 10% mortality for patients being treated by hemodialysis,^{12, 13} although the long-term results of chronic hemodialysis therapy are themselves disappointing. A mortality of 59% has been reported in one study with a mean follow-up duration of 6.5 years.¹⁴

A successful renal transplant results in rapid reversal of the patient's multiple problems due to endstage renal disease. While the artificial kidney is only a filter, the kidney transplant not only restores renal function, but is also an endocrine organ. For example, the new kidney stimulates the bone marrow so that the patient has a normal hematocrit within a few months following the transplant. The bone lesions of renal osteodystrophy heal, and growth in children is possible.¹⁵ One of our young recipients grew two inches in six months after his transplant.

Because of the clinical improvement brought about by a successfully functioning kidney transplant, a remarkable amount of rehabilitation is possible.

About 85% of our recipients of successful transplants have had an improvement in rehabilitation that was not possible while on dialysis therapy. Although there are formidable problems associated with transplantation, such as an increased incidence of tumors,¹⁶ and a susceptibility to infection, a long-term success rate of even 50% justifies the risk in many patients, provided that the mortality is low.

There have been important developments over the past few years which have helped to lower the mortality and morbidity of transplantation, and at the same time have provided many recipients with long-term functioning grafts. Foremost has been the basic philosophy that the recipient's life is of primary importance, and that graft survival is secondary. If a recipient has repeated rejection episodes, immunosuppression is discontinued and the graft is removed. It has been well demonstrated that the mortality following transplantation is often due to the dangers of excessive immunosuppression.^{8, 12}

Another major advancement has been the use of the preservation apparatus for cadaver kidney transplantation. This benefits the patients by providing time for pre-operative preparation, such as blood transfusions and hemodialysis treatment. The latter results in a lowering of serum potassium levels, removes excessive body water, and corrects the uremic bleeding diathesis. This permits a safer operation and places the patient in a better physiologic status in the event that the cadaver kidney has a prolonged period of oliguric ischemic injury. Preservation also makes possible a physiologic evaluation of the kidneys, preventing transplantation of irreversibly damaged kidneys.¹⁷

Other measures to reduce morbidity and mortality are the use of topical antibiotics to prevent wound infections,^{7, 18} the administration of frequent oral antacids to prevent upper gastrointestinal hemorrhage, frequent monitoring of renal function and immunosuppression, special nursing care, and intense patient education. Also, the availability and frequent use of specialists in infectious disease, hematology, gastroenterology, etc., is of obvious importance.

The development of a clinically oriented immunology research laboratory at Hartford Hospital has also aided the recipients of renal transplants. Some of the complex immunology tests, too time-consuming for a routine clinical laboratory, have provided useful information for the management of individual recipients. The laboratory also conducts research in immunobiology, and thus has the potential of benefiting future transplant recipients. The rejection process is still the greatest problem to be surmounted in clinical transplantation.

Another major limitation to current renal transplantation is the small number of cadaver kidneys offered for transplantation. The problem is not due to an insufficient number of suitable donors, but rather to the fact that their kidneys are not often made available for transplantation. There are more than 50 patients waiting for a cadaver kidney transplant in the half of Connecticut served by the Hartford Hospital Transplantation Service. Many patients who have rejected a first graft can be successfully re-transplanted, but the poor supply of kidneys limits the number of re-transplants that can be performed. If a suitable recipient for donated cadaver kidneys is not available in the Hartford program, the kidneys are offered to the Interhospital Organ Bank in Boston which lists all the potential recipients in New England. The kidneys would then be delivered to another transplant center. For example, kidneys have been sent from Hartford to the Yale University Transplant Service, the Peter Bent Brigham Hospital, and the Massachusetts General Hospital. No donated kidney suitable for transplantation is ever wasted.

Although renal transplantation is no longer a research endeavor, it is still a complex procedure which involves the close cooperation of many individuals and institutions. Because a successful renal transplant approaches a cure for endstage renal disease, the degree of success which is now possible can be extended to many more of those patients.

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FOOTNOTES

The patients transplanted at this center were maintained on hemodialysis therapy by the following physicians: Mark Izard, M.D., Hartford Hospital; Joseph Amato, M.D. and Malcolm Galen, M.D., St. Francis Hospital; Wong Lee, M.D., William W. Backus Hospital, Norwich; Herbert DiMeola, M.D., Rockville General Hospital; Paul Doolan, M.D., St. Mary's Hospital, Waterbury; Walter Hampton, M.D., McLean Home, Simsbury; and Leroy Shear, M.D. and John Fitzgibbons, M.D., Medical Center of Western Massachusetts, Springfield, Mass.

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Epilepsy: Some Comments on Diagnosis and Treatment

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Epilepsy is one of the most common disorders confronting the neurologist and neurosurgeon. All practicing physicians, however, regardless of their field of specialization, will probably deal with this ubiquitous syndrome.

The management of the majority of epileptic patients involves the use of anticonvulsant drugs; the rare individual with medically refractive seizures referred for surgical extirpation of epileptogenic cortical tissue. The purpose of this brief communication is to acquaint the reader with certain concepts in the diagnostic evaluation of patients with epilepsy and recent advances in the practical pharmacology of the anticonvulsant drugs. The interested reader may refer to several recent publications for more detailed discussions of epilepsy.^{1,4}

"Epilepsy" can be defined in the broadest sense as a disorder characterized by recurrent, usually transient, episodes of disturbed central nervous system function (seizures) and excludes extracerebral causes such as syncope, episodic psychiatric syndromes, narcolepsy and obviously many other transient disturbances of brain function such as transient ischemic attacks. The diagnosis of epilepsy is based entirely on the clinical manifestations of the episodes. Laboratory tests such as the electroencephalogram (EEG) may add important corroborating evidence but should never be the sole means whereby the diagnosis of epilepsy is made.

The EEGs of a small percentage of the non-epileptic population may contain abnormal potentials (spikes or epileptiform transients). A recent study⁵ has shown that approximately 30% of children followed for several years after an episode of benign febrile seizures developed paroxysmal EEG abnormalities. These EEG abnormalities may reflect a genetically determined lowered seizure threshold which is expressed clinically only during childhood fevers but is clinically silent thereafter. Children with such EEG abnormalities do not appear to have an increased risk for the development of epilepsy when compared to all children with febrile seizures (approximately 3% ultimately develop non-febrile seizures).

The electroencephalogram is a valuable aid in corroborating the physician's clinical impressions and may add useful unique information in the evaluation of the epileptic patient. If a physician is to gain the maximum amount of information from this test he should consider the natural history and type of seizure, and the technical capabilities of the EEG laboratory.

The EEG should be scheduled at a time when the patient's seizures occur or are more frequent. Women with seizures during menses, or children with minor absence episodes in the morning, are more apt to have abnormal EEGs if recordings are done during these critical periods. The EEG should always be obtained with the patient awake and sleeping. Many patients with documented seizures, particularly those arising

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from the temporal lobes, will have normal or non-specifically abnormal EEGs during the waking portion of the recording. Furthermore, the sleep recording may reveal a focal epileptiform disturbance not suspected during a waking record which contains only diffuse paroxysmal activity. Sleep deprivation (keeping the patient awake the entire night prior to the EEG) is also a useful activating procedure. A significant number of epileptic patients whose routine waking and sleep EEGs are normal will manifest epileptiform potentials on a subsequent sleep-deprived recording.⁶

Nasopharyngeal electrodes should also be used in all adolescents and adults with suspected seizure disorders.⁷ These fine wire electrodes are inserted through the nose by the technologist and come to rest against the superolateral aspect of the nasopharynx. They record the electrical activity of the mesial portion of the temporal lobes, a common site for epileptogenic foci.

Hyperventilation and intermittent photic stimulation should be performed routinely on all patients with suspected seizures and may activate epileptiform potentials, particularly those associated with the diffuse epilepsies (such as petit mal). An abnormal response to photic stimulation (photo-convulsive response) is frequently seen in patients during withdrawal from certain drugs such as the barbiturates as well as in the genetic epilepsies and certain metabolic encephalopathies such as uremic encephalopathy.

A negative EEG, despite the application of the previous suggestions, should not be used to “rule out” a seizure disorder. A small percentage of epileptic patients (8% in one series)⁸ have repeatedly normal or nonspecifically abnormal tracings between seizures. The EEG must be correlated with the clinical situation and the final decision concerning the cause of the patient’s complaints rests with the clinician.

Once a diagnosis of epilepsy has been made, appropriate anticonvulsant therapy should be initiated. A cataloguing of drugs and the clinical spectrum of seizures which they are most effective in controlling will not be attempted, rather the general principles of anticonvulsant drug therapy will be reviewed.

Therapy should be initiated with a single drug, usually phenobarbital. The dosage of the drug should be increased at intervals determined by the known half-life of the drug. Diphenylhydantoin (half-life of approximately 22 hours)⁹ and phenobarbital (half-life of 53 to 140 hours)¹⁰ dosage should be increased at biweekly intervals to allow for stabilization of blood levels before the next increment is made.

If the maximal tolerated dose of this drug is ineffective, a second drug should be added and gradually

increased until therapeutic levels are reached. If seizures are then controlled, the initial drug may be gradually reduced. Many epileptic patients will require two, three and occasionally four drugs taken concomitantly before seizure control is achieved.

A drug should not be discontinued at the same time another is being introduced. If seizure frequency should increase it would be difficult to determine which drug is responsible. Occasionally drugs such as ethosuximide or clonazepam may exacerbate or precipitate major motor seizures in patients with petit mal or myoclonic epilepsy. The increase in seizure frequency, therefore, might be attributed to the drug being withdrawn rather than the one just introduced.

Before a drug is discontinued as ineffective, serum levels should be determined.¹¹ (Table.) There is a reasonable correlation between drug dosage, serum

COMMONLY USED ANTICONVULSANT DRUGS

<i>Drug</i>	<i>Usual Oral Dosage (mg/day)</i>	<i>“Therapeutic” Blood Level (ugm/ml)</i>
diphenylhydantoin	300-400	10-20
phenobarbital	100-180	15-40
primidone	750-1000	5-10*
ethosuximide	1000-1250	30-100
carbamazepine	800-1200	4-10

**preliminary values (further study needed)*

level, therapeutic effects and certain toxic effects. The “therapeutic” level will vary from patient to patient. If seizures are controlled at blood levels below these arbitrary therapeutic ranges, there is no need to increase the dosage further. In the majority of patients consuming 300-400 mgm of DPH daily, low serum levels represent poor patient compliance. Simply changing a patient’s regimen from three times a day dosage to a single dose may correct this situation (vide infra).

The daily drug regimen should be adjusted according to the known pharmacological features of each drug. Diphenylhydantoin and phenobarbital may be given as a single daily dose—the blood level is relatively stable over 24 hours because of the slow hepatic degradation of the drug. It is rarely necessary to concomitantly administer phenobarbital and primidone to the same patient because the latter drug is partially metabolized to phenobarbital. It has recently been demonstrated that diphenylhydantoin is poorly absorbed when injected intramuscularly. This route of administration should never be used; if rapid blood levels must be reached (such as in status epilepticus or patients unable to take oral medications) DPH should be given slowly intravenously (not exceeding 50 mgm/minute). If the physician wishes to achieve a therapeutic blood level quickly,

he must give the patient a loading dose. This dose should consist of 1000 mgm of DPH (in adults) given orally or by slow intravenous infusion. Therapeutic DPH blood levels will be reached in 7 to 10 days if the patient is started on the usual maintenance dose of 300-400 mgm.

One must also remember that anticonvulsant drugs may alter the pattern of seizures. The appearance of a new type of seizure following the introduction of a drug, particularly in a patient with a long standing seizure disorder, must be attributed to the drug rather than a progressive neurological disorder. Further diagnostic evaluation should be withheld until the effect of drug withdrawal is evaluated.

Idiosyncratic and toxic reactions to the anticonvulsant drugs, particularly DPH, are being reported with increasing frequency.¹²⁻¹⁴ These include not only such easily recognizable entities as ataxia, organic brain syndromes and dermatologic disorders, but also exacerbation of seizures or the development of neurological syndromes such as chorea, hemiparesis, etc. These syndromes are always associated with toxic serum levels (i.e. over 30 ug/ml).

Diphenylhydantoin may also interfere with the metabolism of other drugs as well as influence the metabolism of hormones such as insulin and adrenocorticoids and Vitamin D. DPH will interfere with the binding of thyroxine to globulin, causing apparent depression of the PBI. Many epileptic patients have been considered to be hypothyroid because of this false lowering of the PBI. Space does not permit the listing of all the idiosyncratic, toxic or metabolic effects of the anticonvulsants. The appearance of a new neurological syndrome or medical disease or an unexpected abnormality in a laboratory test value in an epileptic patient receiving anticonvulsants, particularly DPH or phenobarbital, should initially be considered by the physician as resulting from the drug before an extensive diagnostic evaluation is embarked upon.

A physician responsible for the evaluation and treatment of patients with seizure disorders should

familiarize himself with the clinical pharmacology of the anticonvulsants. More adequate seizure control can be attained by the application of these basic principles. Seizure disorders, considered medically refractive, can often be controlled by simple adjustment in dosage schedules, measurement of serum anticonvulsant levels or the addition of a second drug.

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Basic Echocardiography: An Over-view

Siegfried J. Kra, M.D.

Echocardiography enables visualization of the heart through ultrasound. The sound waves operate at a frequency greater than 20,000 cycles per second, above the audible range. Echocardiography is a non-invasive technique currently used to diagnose many cardiac conditions without the necessity of cardiac catheterization. Neither morbidity nor mortality have ever been reported.

History

High frequency sounds were described as early as 1800. Sokolov described using ultrasound for detecting flaws in metals.¹ In 1883, Galton developed the method of producing vibrations as high as 25,000 per second. Langevin, during World War I in France, developed methods of transmitting ultrasound waves through water by using a quartz crystal. In nature we find animals using ultrasound, namely bats and dolphins. The Navy used ultrasound during World War II for the detection of submarines. After World War II, Firestone continued the work of detecting flaws in metals.² By the early 1940's and 1950's numerous investigators examined every organ of the body using this procedure. Echocardiographic examination of the heart was first performed by Kidell to determine cardiac volumes.³ Hertz of Sweden was the first one to obtain a commercial ultrascopes; he collaborated with Edler in examining the heart, an event that might be called the birth of Echocardiography.⁴ A group in Germany, headed by Dr. Effert, duplicated the work by Edler.⁵ Edler was the first to describe the detection of left atrial tumors. In 1960, Brown and Schmidt in Germany repeated the work of Edler and Effert, which was presented in a scientific film at the third European Conference of Cardiology in 1960.^{6,7,8} In 1957 echocardiography was introduced to the United States by John Reed, an engineer, who worked with Wilde on many of the early medical uses. Reed went to the University of Pennsylvania where he met Claud Joiner and then confirmed the work on mitral stenosis by Edler and Effert.

Feigenbaum established a laboratory in 1963 for cardiac catheterization and echocardiography. He studied the posterior left ventricular wall and the mitral valve and emphasized that Echocardiography can definitively diagnose mitral stenosis, pericardial effusion, atrial myxomas, idiopathic hypertrophic aortic stenosis, prolapse of the mitral leaflet, certain

congenital heart disease, rupture of the chordae, acute aortic insufficiency, subacute bacterial endocarditis, and others.⁹

The purpose of this report is to describe briefly the technique of echocardiography with some specific examples, and underline the information that can be derived from its use.

Instrumentation

Various standard commercial ultrasonic scopes are available, namely, timers, a pulse generator, a transmitting and receiving crystal (a transducer which is applied to the patient's chest), an amplifier, a cathode ray, and an oscilloscope. Electrical signals are transmitted through a crystal, which converts electrical energy into pulse or sonic energy, and are then transmitted through the tissue to be examined. At the same time a signal is sent to the cathode ray tube and is seen on the oscilloscope. The returning echoes are reflected to the crystals, now acting as a receiver that converts the sonic energy back into electrical energy. The process can be viewed on the cathode ray tube screen. Strip chart recording instruments are used to record the returning echoes, or a Polaroid picture can be taken of the oscilloscope display.

Echocardiographic Examination

The examination consists in the patient lying comfortably, generally with the head elevated at a 45 degree angle and turned slightly toward the left. The transducer is placed on the chest in the second or third intercostal space within three to four centimeters from the left sternal border. Instrumentations will not be discussed here except to mention that the instruments have various settings for near and far gain to bring distant echoes closer, and closer ones into better focus. The examination is begun by identifying the chest wall, the anterior wall of the right ventricle, the right ventricular cavity, the left side of the septum, and the left ventricular wall, posterior papillary muscles, and mitral valve. The anterior and posterior leaflet of the mitral valve are identified as well as the endocardium and epicardium. (Figure No. 1) Tilting the transducer superiorly, the outflow track is visualized through the root of the aorta and aortic valves and left atrium, left atrial cavity, and left atrial wall. Simultaneous electrocardiogram and phonocardiogram are employed to identify the systolic and diastolic events. This type of echocardiogram is called a M mode scan of the heart. (Figure No. 2)

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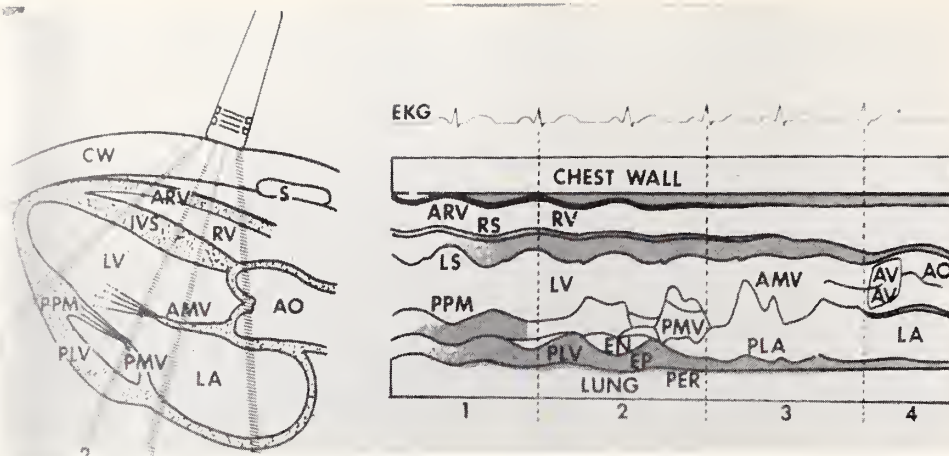


Figure 1
Schematic Scan

ARV - Anterior Right Ventricle	END - Endocardium
RV - Right Ventricle	EP - Epicardium
RS - Right Septum	PMV - Posterior Mitral Valve
LS - Left Septum	AMV - Anterior Mitral Valve
PPM - Posterior Papillary Muscle	PLA - Posterior Left Atrium
LV - Left Ventricle Cavity	LA - Lateral Atrium
PLV - Posterior Left Ventricular Wall	AV - Aortic Valve

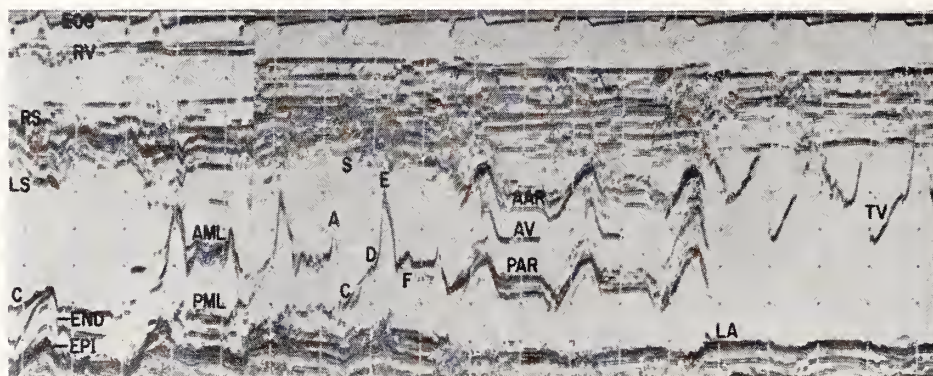


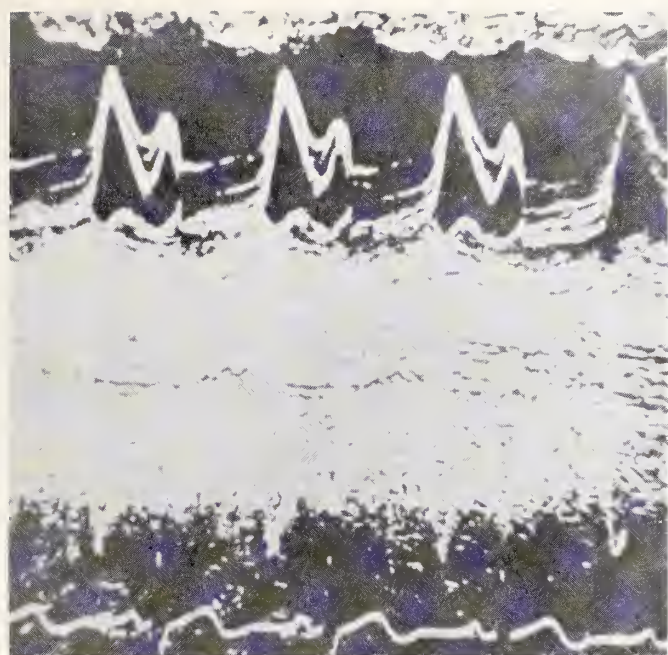
Figure 2
M-Mode Scan

EPI - Epicardium	RV - Right Ventricle
TV - Tricuspid Valve	RS - Right Septum
LA - Left Atrium	LS - Left Septum
AAR - Anterior Root of Aorta	AML - Anterior Mitral Leaflet
AV - Aortic Valve	PML - Posterior Mitral Leaflet
PAR - Posterior Root of Aorta	END - Endocardium

Examination of the Mitral Valve

The mitral leaflet is the simplest echo to obtain with the anterior and posterior leaflets readily identified. A characteristic "M" shaped configuration can be seen. Figure No. 3 shows a normal pattern motion of the anterior and posterior leaflet of the mitral valve. One observes in "DE" the mitral valve opens rapidly, occurring early diastole and, after rapid filling, the mitral valve closed (position EF). The EF slope

normally has a diastolic velocity between 80 and 150 millimeters per second. The posterior leaflet normally moves in the opposite direction of the anterior leaflet. The diagnosis of mitral stenosis can only be made with certainty if the posterior leaflet moves in the same direction as the anterior leaflet. A mobile mitral valve has an EF slope of 10 to 25 millimeters per second. 25 to 35 millimeters per second is considered mild mitral stenosis, and less than 10 millimeters per



Anterior Leaflet

Posterior Leaflet

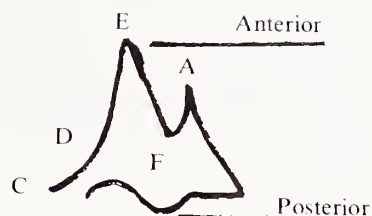


Figure 3
Normal Mitral Valve

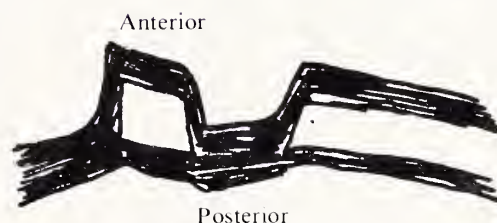


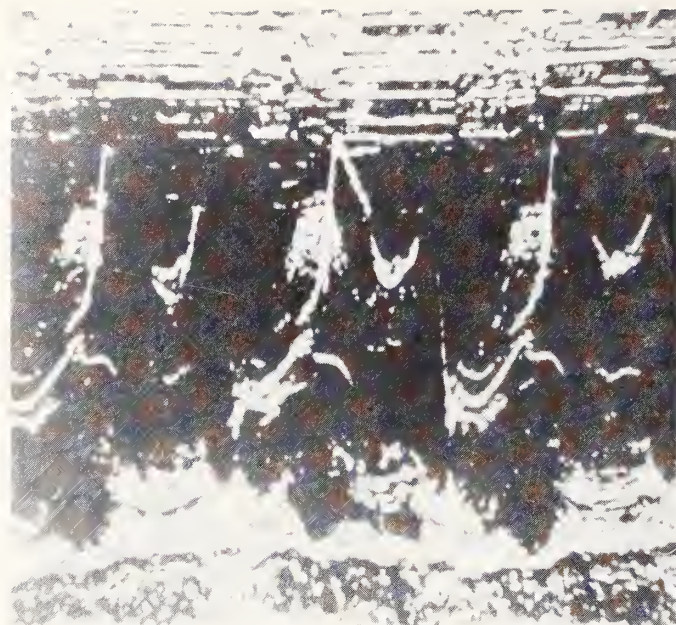
Figure 4
Severe Mitral Stenosis

second severe mitral stenosis. If the EF slope is greater than 20 millimeters the valve is mobile; if less than 20, the valve is immobile. This data is helpful to the surgeons who must make a decision on a commissurotomy. By studying the EF slope of the echogram the physician will be able to follow the patient with mitral stenosis through the years. The EF slope will be markedly increased if the commissurotomy is successful. A diminished EF slope is also found in decreased ventricular flow as observed in arteriosclerotic heart disease, atrial myxoma, idiopathic hypertrophic

aortic stenosis, coronary artery disease, and pulmonary hypertension.⁹ Figure No. 3 and Figure No. 4.

Prolapse of the Mitral Leaflet or Barlow's Syndrome

This is a common disorder presenting with a systolic click and late systolic murmur, due to a redundant mitral valve and ballooning of the mitral leaflets during mid systole. The patients may complain of chest pain, demonstrate arrhythmias, and sometimes develop sub-acute bacterial endocarditis. The abnormality affects both leaflets with the posterior leaflet prolaps-



Anterior Leaflet

Posterior Leaflet

Figure 5
Prolapse of Mitral Leaflet

ing into the left atrium. There is an abnormal systolic posterior motion of the anterior and posterior leaflet into the left atrium during systole.¹⁰ Simultaneous phonocardiography will demonstrate the leaflet prolapses after the first heart sound at the point that the click and the murmur are heard. Figure No. 5 and Figure No. 6.

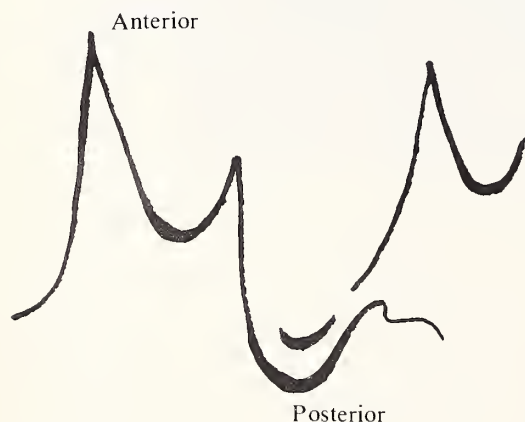


Figure 6
Prolapse of Posterior Leaflet

Fine fluttering of the anterior mitral leaflet is found in atrial fibrillation while coarse fluttering is diagnostic of aortic insufficiency. It is considered to result from the blood striking the anterior leaflet which also explains the Austin-Flint murmur in aortic insufficiency. Fungal vegetations may be found on the anterior leaflet in cases of acute fungal endocarditis.

Idiopathic Hypertrophic Aortic Stenosis

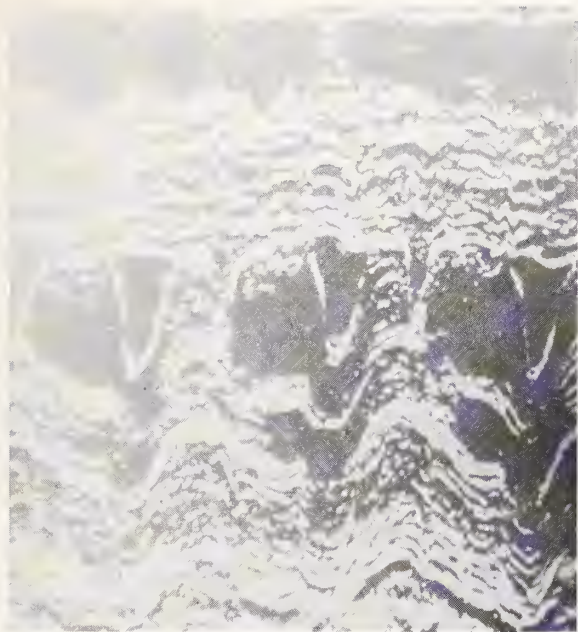
This condition can be detected and diagnosed by the echocardiogram when the mitral valve is studied. It can be shown that the anterior leaflet of the mitral valve has a systolic anterior motion.¹¹ The septum will be markedly thickened. This SAM may not be present unless such maneuvers are performed as an inhalation of amyl nitrate or an infusion of isoproterenol. Some patients may demonstrate asymmetrical septal hypertrophy with no systolic anterior motion, and no obstruction. Figure No. 7.

Pericardial Effusion

By directing the transducer towards the apex inferiorly and laterally the posterior left ventricular wall can be visualized, and by decreasing the sensitivity or damping, the pericardium can be readily seen. An echo-free space will be found between the pericardium and endocardium which is diagnostic of pericardial effusion. Both small and very large effusions may be diagnosed in this manner. No other studies are necessary to confirm this diagnosis. Whether cardiomegaly is due either to pericardial effusion or to an enlarged heart can thus be ascertained. Figure No. 8.

Aortic Valve

The aortic root is visualized by proper angulation of the transducer. The aortic valve cusps appear as a box-like configuration with the anterior cusp of the right coronary cusp and the posterior commissure cusps visible. Dilatation of the aortic root is detected by an in-



————— Interventricular Septum Thickening

————— S A M (Systolic Anterior Motion)

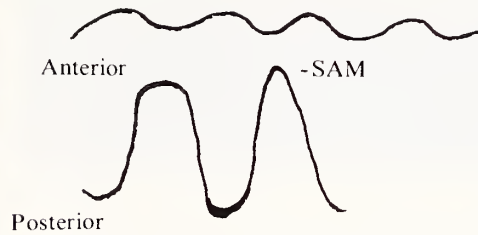
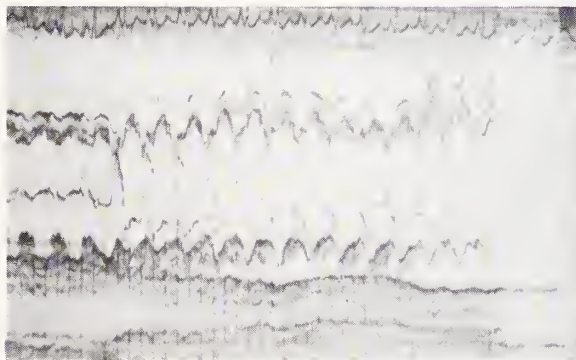


Figure 7
IHS



Endocardium

Effusion

Pericardium



Endocardium

Effusion - Echo free space

Pericardium

Figure 8

creased width of greater than 2.2 centimeters. A definite narrowing of the cusps is suggestive of aortic stenosis. A diameter of less than 0.6 centimeters is consistent with aortic stenosis. Premature closure of the mitral valve before the onset of the QRS complex is associated with severe acute aortic insufficiency. Calcifications can be detected in calcific aortic stenosis.¹³ Figure No. 9.

Examination of the Left Atrium

The left atrium is located behind the root of the aorta by pointing the transducer toward the base, superiorly and medially. The normal left atrium is approximately the size of the root of the aorta. Measurements of the left atrium are extremely accurate when compared to angiographic measurements. Left

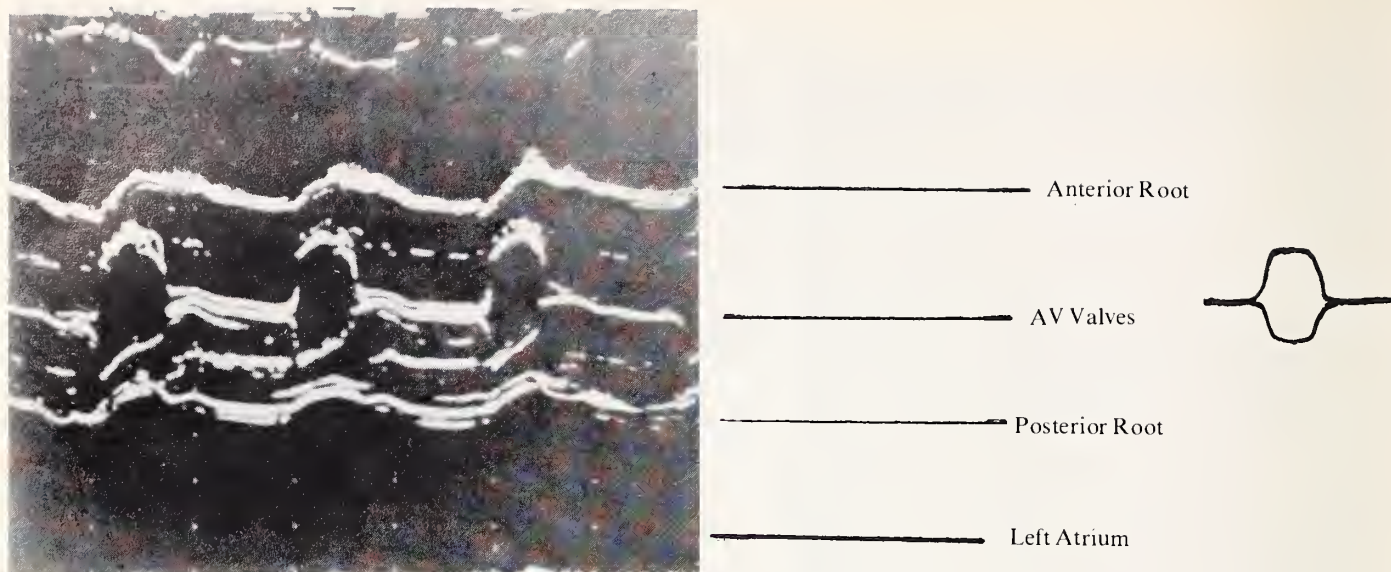


Figure 9
Normal Aortic Valves

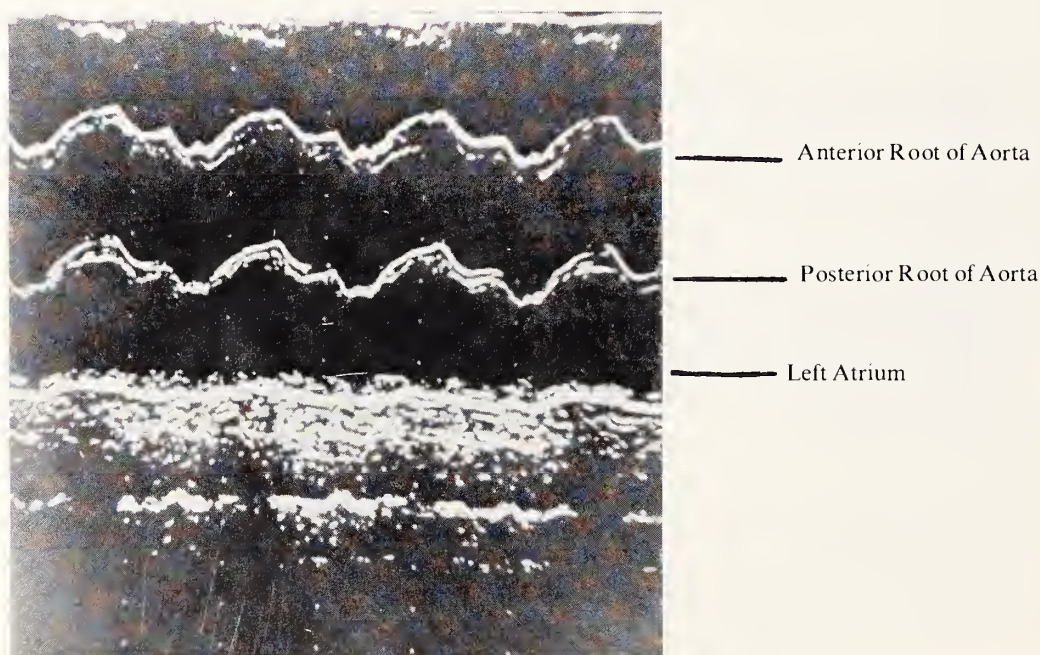


Figure 10
Left Atrium

atrial enlargements can accurately be diagnosed as well as thrombus formations in the left atrium. Likewise, a myxoma may be seen in the left atrium. Behind the left atrium a common channel can be identified in total anomalous venous drainage. Figure No. 10.

Left Ventricle

With the transducer directed inferiorly to the mitral valve, quantitative measurements of the left ven-

tricular chamber are made, between the left side of the interventricular septum and the posterior left ventricular wall during diastole and systole, LVIDS and LVIDD. These internal dimensions provide information about the size of the left ventricle. This technique does not measure volume. It is merely a simple internal dimension of the left ventricle, which enables us to obtain an overall size of the left ventricle when it is dilated. It also gives us an estimation of the ejection

fraction. Systolic volume can be calculated by the formula shown, as well as cardiac output. These studies correlate well with angiographic studies.

Coronary Artery Disease

The coronary arteries cannot be visualized by the echocardiogram. However, the motion of the anterior wall and the interventricular septum supplied by the left anterior descending artery are studied. In a normal contracting heart the septum moves away from the transducer in systole, and towards the posterior left ventricular wall, and then relaxes in diastole. After a myocardial infarction the septum may lose its motion entirely or decrease its motion. Likewise, the anterior wall can be seen to move in opposite directions. Studies in our own laboratory have shown the septum loses its motion during an attack of angina. If nitroglycerine is then given, the septal motion returns. Likewise, after a stress testing, if there is more than a 2 millimeter ST segment depression, the septal motion disappears, and reappears with the administration of nitroglycerine. Ventricular aneurysms after a myocardial infarction can be diagnosed as well as rupture of the chordae tendinae and anterior leaflet.

Congenital Heart Disease

Tetralogy of Fallot, ventricular septal defects, overriding of the aorta, and septal defects all have specific echocardiographic patterns. Large interventricular septal defects are identified by discontinuity of the ventricular septum between the aorta and the mitral valve. Measurements of right ventricular enlargements can be made, and by studying the septum and noting any paradoxical motion of the septum, (the septum normally moves towards the transducer during systole). In significant atrial septal defects the characteristic findings of right ventricular enlargements and paradoxical motion of the septum are found and surgical correction is mandatory.¹⁴

Conclusion

The Echocardiographic examination is difficult, but the interpretation is not. Many diagnoses can be firm-

ly made without cardiac catheterization, such as mitral stenosis, pericardial effusion, idiopathic hypertrophic aortic stenosis, prolapse of the mitral valve, and atrial myxomas. The echocardiogram is extremely useful for patients with heart murmurs, enlarged hearts, and chest pain. A diagnosis may be obtained in a non-invasive manner, and repeated many times. Echocardiography is an essential part of the cardiac examination.

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Priorities in the Diagnostic Evaluation of Hypertension

Anthony E. Voytovich, M.D.

Abstract—As the diagnostic procedures for hypertension grow more and more sophisticated, it becomes essential to look back and reemphasize the standard office techniques in their value.

Essential hypertension is still, by far, the most commonly encountered and contributes most heavily toward cardiovascular morbidity and mortality.

A conservative diagnostic approach is suggested in which familiar office procedures are used optimally to establish the presence of end-organ damage, associated risk factors and likelihood of secondary hypertension. The rich and varied information that these familiar questions and studies can provide is reviewed and a framework for their consideration is suggested. Hopefully, we can work toward reexamining the cost-effectiveness of our efforts.

The literature today is filled with brilliant and innovative work on hypertension. Diagnostic studies are becoming increasingly sophisticated and we are making exciting breakthroughs in pathogenesis and therapy. Now, more than ever, we must look back. We should reemphasize and focus on our office procedures and their utility so as not to lose sight of the kinds of working data necessary to properly manage our patients. We simply need not approach the renin-angiotensin system or adrenal hormone analysis in everyone; yet, there are basic facts which should be clearly documented in every hypertensive patient. It is the purpose of this article to pause for a moment and look at the familiar aspects of the evaluation, how to get the most information out of them, and how to organize that information in the most revealing and valuable way. The familiar and routine aspects of the evaluation can be looked upon as forming the first limb of a two part diagnostic process. During the initial workup, this first limb should establish the severity of target organ damage, uncover associated risk factors, and provide clues toward the necessity of looking for secondary causes of hypertension. The search for secondary causes, if deemed necessary after initial workup, represents the second phase of the evaluation.

The greatest priority of all is discovering hypertension in the first place. As basic and obvious as this

may sound, an essay such as this would be incomplete without considering step one! The record could be better. Finnerty et al.¹ screened 6,480 patients in supermarkets and found a prevalence of hypertension of 24% in patients over 25 years old. He went on to describe a 50% failure rate in keeping verification appointments and showed very conclusively that compliance improved with personal contact. The Framingham study² showed an incidence of 18% in men between 30 and 62 years old, and Abbey³ found that 29.8% of 861 dental clinic patients were potential hypertensives. As common a problem as hypertension is, we seem not to be discovering it frequently enough. Freis points out that we are properly identifying and controlling only about 20% of cases.⁴ Why? One difficulty is captured in the words of an elderly gentleman who, when asked why he wouldn't take his antihypertensive medicine, replied, "It don't hurt, Doc!" Indeed it does not! Gynzelberg in his study of 5,200 men found that amazingly few hypertensives had any symptoms at all.⁵ Even the old standbys such as headache, nosebleed and tinnitus are no more common among hypertensives in yet another study group of 6,672 patients.⁶ Someone must discover the disease. By the time the patient presents himself, it is often too late to initiate an effective program of therapy, for the symptoms reflect target organ damage. The first priority, then, is finding the disease in the population we serve. Not only should we continue to record the blood pressure on our patients at every visit, we should encourage our colleagues in the health field (dentists, public health nurses, podiatrists, industrial nurses) to do the same and we should reinforce them when they do. As obvious as it may appear, this simple priority might potentially have the greatest impact on cardiovascular morbidity of anything we might do, regardless of how sophisticated or up to date it might be.

The second priority is in properly recognizing an abnormal blood pressure once it's taken. There has been some confusion as to when concern should arise. What about the isolated elevation in the anxious patient? How about an elevated systolic only? Is 140/90 always the upper limit of normal?

What is an Abnormal Blood Pressure?

Age is definitely a factor in the definition of hypertension. Under 40 years of age, 140/90 is accepted as the upper limit of normal whereas over 40, 160/95 is

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used as the cutoff point.⁷ The higher figure allows for gradual loss of vascular compliance and increased peripheral resistance with age. At borderline or moderately elevated levels, three determinations on separate days should be used to confirm the diagnosis and exclude observational error. Systolic elevations alone in younger patients represent less cause for immediate concern; however, such individuals should be followed very closely at regular intervals since they frequently go on to distinctly abnormal levels.

Many physicians discount elevated pressures in obese patients with the notion that larger arms are harder to compress and readings will be falsely high. Actually, this is not the case. If the inflatable bag completely encircles the arm leaving no gap about the circumference, and if the rubber bladder does not balloon out, arm diameter becomes a negligible variable in the measurement of blood pressure.⁸ Additionally, care must be used to avoid the auscultatory gap which occurs during the second or murmur phase. Otherwise, the observer would hear silence and might falsely attribute it to occlusion of the vessel. This error is avoided by inflating the cuff until the pulse is totally obliterated by palpation. It has been estimated that 5% of hypertension would be missed if this error were to occur consistently.⁹

The discovery and proper identification of hypertension represent the most critical priorities. It would be a mistake to consider more specific diagnostic maneuvers before addressing these obvious but primary issues.

Purposes of Diagnostic Evaluation

To many, the hypertensive workup conjures up images of renin determinations, arteriography and complex protocols. The reader today is confronted with a debate over the prevalence and relative importance of secondary forms of hypertension. Gifford found that only about 5% of 5,000 patients referred to the Cleveland Clinic for evaluation had a curable cause identified.¹⁰ Kaufman and Maxwell on the other hand suggest that secondary hypertension is becoming more common.¹¹ Regardless of the percentage of patients who actually have pheochromocytoma or aldosteronism, the first part of our two-part evaluation should be the *same*. The next priority, then, after discovery and identification is a proper first phase evaluation which serves to: 1) establish target organ involvement, 2) identify associated risk factors, and 3) provide the basis for designing a selective second phase workup. Only then should that individualized second phase workup for secondary forms of hypertension be undertaken. It is essential that the second phase of investigation be planned selectively and carefully. It has recently been suggested that the cost of

screening and treating the total American renovascular hypertensive population would exceed 10 *billion* dollars.¹²

Phase One, The Routine Data Base

This should begin with a complete history and physical examination which will contribute heavily to the subsequent diagnostic process in evaluating target organs, associated risk factors, and findings suggestive of secondary causes. Let us consider each of these in turn:

1. Target Organ Evaluation

a. *The Retina.* Hypertension affects the arteriolar side of the retinal circulation and leads eventually to extravascular changes including cotton wool patches, hard exudates, flame and deep hemorrhages. The earliest change is arteriolar narrowing which, because of its reversibility, occurrence transiently in toxemia of pregnancy and high oxygen environments, is felt to be due to spasm. Eventually, narrowing (which may be either segmented or generalized) will become fixed, hyalinization of the arteriolar wall will progress, and the reflection of light from the ophthalmoscope will widen to produce the so-called copper wire change. With sufficient narrowing, the silver-wire change will occur and the vessels will appear as bloodless narrow white lines. A-V compression is a sign of hypertension of long standing. One must avoid diagnosing AV nicking within one diameter of the disc or before the second crossing since the retinal vessels may still contain the thick media characteristic of the central retinal artery. The degree of progression of these changes and the presence or absence of hemorrhages and exudates bears a good correlation to the duration and severity of the hypertension.¹³ Careful fundoscopy is an important diagnostic step.

b. *The Heart.* Hypertension produces concentric hypertrophy of the left ventricle, accelerated atherogenesis and eventually left ventricular failure. When left sided failure is long standing left atrial enlargement follows along with pulmonary hypertension and eventual right sided failure.¹⁴ On physical examination, an S4 may be one of the earliest (though most nonspecific) manifestations of hypertensive cardiac disease and may persist for years in the absence of other findings. Additionally, signs of left ventricular hyperactivity or hypertrophy and congestive heart failure should be sought during the examination as well as subsequently by ECG and chest X-ray. A carefully generated baseline will provide clues not only as to the duration and severity of the disease, but, by reference during the subsequent management, to progression or intermittent poor control between office visits.

c. *The Kidney.* Hypertension produces characteristic changes in the renal vasculature referred to as nephrosclerosis. Changes in small arteries and arterioles produce glomerular hyalinization and tubular atrophy. Renal size is usually preserved.¹⁴ Clinically, patients are asymptomatic at the outset and low grade proteinuria, azotemia and hyperuricemia with an otherwise unremarkable sediment might persist for years. The rate of progression is variable and difficult to relate to blood pressure levels; however, precipitous worsening of azotemia, proteinuria or hematuria frequently herald the onset of a malignant phase. A BUN, creatinine and uric acid and a careful urinalysis with examination of the spun sediment generally suffice to fix a baseline. In addition, marked abnormalities might suggest that a malignant phase is imminent or that further consideration of renal disease as a *causative* factor must be made.

d. *The Brain.* Hypertensive encephalopathy is a late complication and represents a specific entity usually of abrupt onset. The patient will show headache, alterations in consciousness, seizures, and evidence of increased intracranial pressure with nausea, vomiting and papilledema. Encephalopathy occurs with severe elevations of blood pressure and usually improves as the pressure is lowered. In addition, hypertension predisposes to a variety of focal vascular problems including accelerated atheromatous disease, thrombotic episodes, hemorrhagic phenomena, and compromised cerebral circulation due to dissection and involvement of the great vessels. A careful history and neurologic exam are sufficient to define the status of this target system.

2. *Discovery of Risk Factors*

In addition to evaluating the target organs, the first line of the workup should attempt to uncover those factors which further jeopardize the hypertensive patient. The principal concern here is to discover diabetes or other conditions contributing to accelerated atherogenesis. In addition to the history and physical then, a two-hour post prandial glucose should be drawn. In young and middle-aged patients a cholesterol and fasting triglyceride level might be of value. Obesity, smoking and inactivity should be discussed and the patient should understand the implications of these factors as they influence the therapeutic program.

3. *Clues to Secondary Causes*

Finally, in addition to clarifying the status of the target organs, and elucidating risk factors, the first line of the evaluation is used to identify signs or symptoms suggesting secondary or curable forms of hypertension. Some analytic thought and attention to detail during this first phase can promote the planning and

execution of a more precise and specific second phase evaluation. It is in the second phase that expense, risk and discomfort become more significant. We certainly cannot evaluate all hypertensive patients for all forms of curable disease in the same way. All throughout the course of the first phase of the evaluation, a check list of secondary causes should be maintained. Relevant data will be available in the very first moments of the interview and will continue throughout the history, physical exam and laboratory investigations performed for other reasons. During the history, women should be asked about the use of oral contraceptives. Weight loss, or paroxysms of tachycardia and palpitations might suggest pheochromocytoma. A history of renal trauma, hematuria, flank pain, stones or recurring infections should signal the need for urography. During the physical examination, coarctation can be discovered by the presence of a continuous murmur over the precordium and a diminished pressure in the legs. Hypermetabolism might further contribute toward the suspicion of pheochromocytoma. Systolic or diastolic bruits in the epigastrium, upper quadrants, or flanks suggest renal vascular disease and, finally, the typical body habitus, facies and skin changes of Cushing's syndrome should be sought. Most of the diagnostic efforts toward discovering secondary causes during the first phase of the evaluation are accomplished along with the target organ and associated risk factor workup. The only additional routine study for this step should be a serum potassium measurement while the patient is on an unrestricted sodium intake and off of diuretic agents. These latter conditions are important since effective salt restriction masks aldosteronism while, on the other hand, diuretic administration with its hypokalemia and kaliuresis can simulate it. If the serum potassium remains above 3.9 meq/liter in the absence of sodium restriction or diuretics, the expensive and time-consuming ten day hospitalization for investigation of primary aldosteronism remains unjustified.

The most common cause of surgically curable hypertension is renal vascular disease. This is the entity about which most of the confusion and debate arise, and it is expensive, time-consuming and potentially hazardous to evaluate fully. Figures vary but the Cleveland Clinic experience showed only 4.4% of 4,939 patients had renovascular disease and that only 1.4% went on to surgical treatment.¹⁰ Considering the astronomical projected cost of finding only the positives, some selectivity must be applied. Gifford has found the following factors helpful in discriminating those individuals in whom urography is indicated.¹⁵

- a. A diastolic blood pressure greater than 110 in a patient less than 30 years old, or greater than 130 at any age.

- b. Systolic and diastolic bruits in the abdomen.
- c. History of hematuria, proteinuria, recurrent infections or stones, flank pain, renal trauma.
- d. Pyuria, hematuria, azotemia or elevated creatinine.
- e. Hypertension of abrupt onset, accelerated hypertension, and hypertension unresponsive to medical management.

In the event of abnormal rapid sequence urography, or persistent clues suggesting renal vascular disease, angiography may be indicated; however, urography and angiography are not recommended as routine. Clear cut indications must exist.

Although we advocate a conservative approach to hypertension focusing on discovery, identification, and proper establishment of baseline data, we would hasten to add one final high priority—the immediate and aggressive evaluation and treatment of severe or accelerated disease regardless of age. Diastolics over 130, rapid progression or evidence of encephalopathy demand immediate diagnostic and therapeutic efforts, preferably in the hospital.

In this article we have focused on a conservative diagnostic approach and have attempted to reemphasize the continued need for surveillance of the population and for a firm establishment of the total clinical picture using familiar office procedures. Then, and only then, need one consider more specialized studies or referral, if at all!

We can markedly influence morbidity and mortality.^{16, 17} We can dramatically decrease the incidence of stroke, retinal hemorrhage, myocardial infarction, azotemia and congestive heart failure but only if the priorities are properly placed. We must maintain our efforts toward discovering and treating that great majority of the nearly 20% of the population with essential hypertension.

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"For when was honey ever made with one bee in the hive..."

Thomas Hood, *The Last Man*



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United States of America Before Federal Trade Commission*

In the Matter of
THE AMERICAN MEDICAL ASSOCIATION,
a corporation,
THE CONNECTICUT STATE MEDICAL SOCIETY,
a corporation,
THE NEW HAVEN COUNTY MEDICAL ASSOCIATION, Inc.

Complaint

The Federal Trade Commission, having reason to believe that respondents The American Medical Association, The Connecticut State Medical Society, and The New Haven County Medical Association, ("AMA," "CSMS," and "NHCMA," respectively), have violated and are violating Section 5 of the Federal Trade Commission Act, and that this proceeding is in the public interest, issues this complaint.

PARAGRAPH ONE: Respondent American Medical Association ("AMA") is a non-profit Illinois corporation with its principal place of business at 535 North Dearborn Street, Chicago, Illinois. Its membership consists of approximately 170,000 individual medical doctors, most of whom are members of state and local medical societies, including CSMS and NHCMA. AMA's affairs, including those complained of, are directed by delegates from state medical societies, including CSMS.

PARAGRAPH TWO: Respondent Connecticut State Medical Society ("CSMS") is a non-profit Connecticut corporation with its principal place of business at 160 St. Ronan St., New Haven, Connecticut. CSMS is a constituent society of AMA. Delegates from CSMS participate in directing the activities of AMA, including those complained of. CSMS has approximately 4400 medical doctor members.

PARAGRAPH THREE: Respondent New Haven County Medical Association, Inc. ("NHCMA") is a non-profit Connecticut corporation with its principal place of business at 362 Whitney Ave., New Haven, Connecticut. NHCMA is a component society of CSMS. Delegates from NHCMA participate in directing the affairs of CSMS, including those complained of. NHCMA has approximately 1200 medical doctor members, which members direct the affairs of NHCMA, including those complained of.

PARAGRAPH FOUR: Most members of respondents are engaged in the business of providing medical care for a fee. In 1974, the fees earned by such physicians exceeded one billion dollars.

PARAGRAPH FIVE: Members of the AMA are located in every state. In the conduct of their business, members of AMA and members of CSMS and NHCMA:

- (A) Receive and treat patients from other states and countries;
- (B) Receive substantial sums of money from the federal government and from private insurers for rendering medical services, which money flows across state lines;
- (C) Prescribe medicines which are shipped in interstate commerce;
- (D) Act in continuing association and cooperation with state and county medical associations, and with individual doctors, in every state, in furthering the agreements described below, in the course of which association and co-operation they use the mails and other media of interstate commerce;

As a result of which conduct, the acts and practices of respondents complained of are in or affect interstate commerce, within the meaning of the Federal Trade Commission Act.

PARAGRAPH SIX: Respondents and others have agreed to prevent or hinder competition between

*This is a verbatim text of the charge brought by the Federal Trade Commission.

As this goes to press, at a special meeting on January 8th (see p. 152) the Council of the Connecticut State Medical Society decided to defend itself against the charges. Just exactly what procedure will be followed depends upon a subsequent meeting in Chicago to be held on January 14th between legal counsel of the Connecticut State Medical Society and the American Medical Association.

As of this date the Board of Governors of the New Haven County Medical Association had not formally made its decision.

medical doctors. This agreement has included agreements to prevent or hinder their members from:

- (A) Soliciting business, by advertising or otherwise;
- (B) Engaging in price competition; and
- (C) Otherwise engaging in competitive practices.

PARAGRAPH SEVEN: Respondents and others have:

- (A) Caused the agreements described above to be published and circulated in a publication called the *Principles of Medical Ethics*;
- (B) Abided by the restrictions contained in the *Principles of Medical Ethics*; and
- (C) Enforced, and have the power to enforce, adherence to the restrictions contained in the *Principles of Medical Ethics*.

PARAGRAPH EIGHT: As a result of the acts and practices alleged above:

- (A) Prices of physician services have been stabilized, fixed, or otherwise interfered with;
- (B) Competition between medical doctors in the provision of such services has been hindered, restrained, foreclosed and frustrated; and
- (C) Consumers have been deprived of information pertinent to the selection of a physician and of the benefits of competition.

PARAGRAPH NINE: The acts, practices and methods of competition described above are unfair and constitute violations of Section 5(a) of the Federal Trade Commission Act.

WHEREFORE, THE PREMISES CONSIDERED, the Federal Trade Commission, this 19th day of December, 1975, A.D., issues its complaint against said respondents.

Notice is hereby given to each of the respondents hereinbefore named that the 9th day of February A.D. 1976, at 10:00 a.m. o'clock is hereby fixed as the time and Federal Trade Commission Offices, The 1101 Building, 414-11th Street, N.W., Washington, D.C. 20580 as the place when and where a hearing will be had before an Administrative Law Judge of the Federal Trade Commission on the charges set forth in this complaint, at which time and place you will have the right under said Act to appear and show cause why an order should not be entered requiring you to cease and desist from the violations of law charged in this complaint.

You are notified that the opportunity is afforded you to file with the Commission an answer to this complaint on or before the thirtieth (30th) day after service of it upon you. An answer in which the allega-

tions of the complaint are contested shall contain a concise statement of the facts constituting each ground of defense; and specific admission, denial, or explanation of each fact alleged in the complaint or, if you are without knowledge thereof, a statement to that effect. Allegations of the complaint not thus answered shall be deemed to have been admitted.

If you elect not to contest the allegations of fact set forth in the complaint, the answer shall consist of a statement that you admit all of the material allegations to be true. Such an answer shall constitute a waiver of hearings as to the facts alleged in the complaint, and together with the complaint will provide a record basis on which the Administrative Law Judge shall file an initial decision containing appropriate findings and conclusions and an appropriate order disposing of the proceeding. In such answer you may, however, reserve the right to submit proposed findings and conclusions and the right to appeal the initial decision to the Commission under Section 3.52 of the Commission's Rules of Practice for Adjudicative Proceedings.

Failure to answer within the time above provided shall be deemed to constitute a waiver of your right to appear and contest the allegations of the complaint and shall authorize the Administrative Law Judge, without further notice to you, to find the facts to be as alleged in the complaint and to enter an initial decision containing such findings, appropriate conclusions and order.

Notice of Contemplated Relief

Should the Commission conclude from the record developed in any adjudicative proceeding in this matter that the acts and practices complained of are in violation of Section 5 of the Federal Trade Commission Act, as alleged in the complaint, the Commission may order such relief as is supported by the record and is necessary and appropriate including, but not limited to, prohibition of any agreement or principle of medical ethics restricting competition between individual medical doctors, including agreements or ethical principles restricting a doctor's freedom to advertise, solicit patients, or to independently determine the fees at which services will be performed. Effective communication of such prohibitions to respondents' members would be required.

IN WITNESS WHEREOF, the Federal Trade Commission has caused this Complaint to be signed by its Secretary and its official Seal to be hereto affixed, at Washington, D.C., this 19th day of December A.D., 1975.

By the Commission.

Women in Medicine: A Survey of Professional Activities, Career Interruptions, and Conflict Resolutions

Trends in Medical Education and Specialization (First of Two Parts)

Eva D. Cohen, M.P.H. and Samuel P. Korper, M.P.H., M. Phil.

Abstract—In view of the increasing number of women entering the medical profession, the areas of specialization, patterns of practice, and interruptions in the careers of women physicians are of interest. The primary purpose of this study was to document trends over time in the professional activities of women physicians and to assess their need for supportive services, including refresher courses and continuing education programs.

The final sample in the survey, conducted in 1973 by the Office of Regional Activities and Continuing Education of Yale School of Medicine, consisted of 373 women physicians whose graduation dates spanned five decades. Thus, the survey provided an opportunity to examine changes over time in the location of their medical education and training, as well as in the areas of specialization as reported in this paper. A subsequent paper reports on aspects of the professional activities of this group of women doctors.

Introduction

In this century, women physicians have obtained full professional recognition and have also learned, in ever-increasing numbers, to combine marriage and family with a career. Yet there persists some feeling among parents and counselors that medicine is not a good career for women; among educators and members of the profession, that women are not a good investment for the limited resources of medical schools, and that women tend to be less productive than men in the medical practice. Very often these beliefs are myths, but they warrant close scrutiny.¹

Unlike many occupations in the health care field, the percentage of women represented in the medical profession in the United States has been relatively small. In 1973, the 30,568 women physicians constituted 8.3 percent of the total physician population.²

In recent years, however, the number of women admitted to medical schools has increased from 9 percent in 1964 to 20 percent in 1974.^{3,4} While the total number of first year medical students barely has doubled in the last decade, the number of first year female medical students has increased three times; women are expected to constitute 30 percent of the entering class of medical students by 1985.⁵ Has this fairly rapid expansion been accompanied by societal changes which may provide greater support for women entering the field? Are there fewer impediments to the satisfactory coupling of career and family responsibilities? It is for these reasons that information on the career patterns of women physicians is of interest.

Several previous studies have examined the role of women in medicine, and the methodology and findings of these studies have provided valuable information for the present analysis. These include surveys of women physicians graduating from medical school between 1909 and 1966, each study focusing on graduates of a particular graduation year. These studies provide data on the professional characteristics of women physicians, information about the extent to which women use their medical education, their attitudes and experiences at various stages in their careers, and profiles of their professional careers over time.⁶⁻¹³

As part of a series of manpower studies on the career patterns of different health occupations, the purpose of the present study was to examine the contribution to medicine of women physicians ever licensed to practice medicine in Connecticut and to observe trends over time in their patterns of professional activities. A particular interest was to examine the nature and extent of interruptions in the career of women doctors, the extent to which they had experienced conflicts between career demands and family responsibilities, the nature of their conflict resolutions, and, finally, to assess the need for institutional assistance through continuing education or refresher courses. The information obtained in the present survey is compared with that obtained in previous studies.

Part I of this paper presents the survey findings on the characteristics of the respondents, the location of their medical schools and subsequent graduate medical education, and the extent of specialization. Information on the professional activities, settings or institu-

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tions, and other aspects of the employment history, as well as on the interruptions experienced by these women doctors, is presented in Part II.

Methodology

Questionnaires were mailed to 687 women physicians born since 1890 who currently are or have been licensed to practice medicine in Connecticut. Addresses were obtained from the records of the Licensure and Registration Department of the Connecticut State Department of Health. The mailing, which was undertaken during the summer of 1973, did not differentiate between physicians currently practicing in the state and those no longer residing in Connecticut. Two follow-up mailings were undertaken, and a total of 378 questionnaires were returned yielding an overall response rate of 55 percent.

Potential bias introduced by non-respondents is a concern in surveys of this nature. However, a telephone follow-up of a ten percent random sample of the non-respondents revealed that non-respondents generally are similar to the respondents in the final sample with respect to many characteristics, for example, marital status and number of children, specialty, professional activities, and setting of most recent employment, and number and length of interruptions. Specifically, a concern that the non-respondents over-represented women who were temporarily inactive or who had terminated their careers appeared to be unfounded.

As the years of medical school graduation for the respondents spanned five decades, the sample was divided into three groups for purposes of the analysis: before 1945, 1945-1959, and 1960-1971. These three groups, rather than a disaggregation into decades, were developed to achieve a large enough sample in each group to permit statistical tests to be applied. Further, it was felt that these time periods accounted for economic, social, and cultural changes, which in different ways may have affected women's decisions to pursue a career in medicine. Since five of the returned questionnaires were incomplete, the final sample consisted of 373 usable questionnaires—107 (28.7 percent) in the 1915-44 group, 151 (40.5 percent) in the 1945-59 group, and 115 (30.8 percent) in the 1960-71 group.

The division of the sample into three groups permitted us to examine the professional activities of the women graduated in the two groups prior to 1960, virtually all of whom would tend to be past their childbearing and childrearing age. Thus, it was anticipated that examination of their professional status would be an indication of their productivity at a time of decreased family responsibilities.

Findings

Characteristics of the Respondents; Age

The mean age of all respondents was 47 at the time of the survey; the mean age of the pre-1945 graduates was 62.7, that of the middle group 46.5, and that in the youngest 34.6.

No significant differences were observed among the three groups with respect to mean age at various stages of training; the mean age at graduation was 26.6, at the end of internship 27.9, and at the end of residency training 30.5. Age at graduation from medical school ranged from age 20, in the case of a foreign graduate, to 42. Eleven percent of the respondents had graduated from medical school after age 30.

Marriage and Children

A slight shift in the percentage of single women was evident among the three age groups: 22.4, 16.7, and 21.7 percent, respectively. However, an analysis of marital status—ever married (80.1 percent) versus single (19.9 percent) indicated no significant differences among the three groups, although it is likely that the percentage of single women in the youngest group will decrease, as some may have delayed marriage until completion of post-graduate training.

Significant changes over time had occurred in the percentage of respondents who had married before versus after graduation ($X^2=18.05$, $p < .001$, 2 df). When compared with data in previous studies, the findings in the present survey confirm the trend toward earlier marriage over the decades. Concomitant trends were observed with respect to the time of birth or adoption of first child in relation to medical school graduation and first employment. The data show a significant increase over time in the number of women who had children before graduation from medical school ($X^2=6.643$, $p=.037$, 2 df). Fifteen percent of the women with children in the youngest group became parents before graduation, in comparison to the oldest group, none of whom reported having children before graduating. In addition, significant differences were observed between the oldest and the middle group of women with respect to the presence of children; 34 percent of the ever married older respondents had no children, while only 17 percent in the 1945-59 group reported no children ($X^2=8.302$, $p < .01$, 1 df). The post-1960 group includes women who may yet have a first child.

Furthermore, as the latest year of graduation from medical school of these respondents was 1971, trends in childbearing patterns within the last four years could not be assessed in this survey. It is possible that the graduates of the last few years have reversed the trend toward early childbearing.

Finally, comparisons between the findings in this survey and those of previous studies with respect to spouse's occupation indicated that generally, a higher proportion of the women, 62 percent, in the present sample were or had been married to physicians.

Region of Education, Training and Current Residence

Information on the location of the respondents' medical schools and their internship and residency programs is presented in Table 1. Of the entire group, 18 percent had attended medical schools in the New England area, although only 9.5 percent had attended medical school in Connecticut. The largest percentage had attended schools in the mid-Atlantic states and a substantial proportion, nearly 20 percent, were graduates of foreign medical schools. Twenty-three percent of the women who completed internships had done so in Connecticut and 31 percent of those who completed a residency completed their first residency within the state.

Statistical tests were applied in an analysis of the relationship between location of medical school and year of graduation; no significant differences were observed among the age groups. Analyses of location of internship and residency in relation to year of graduation revealed significant differences, however. A higher percentage of the younger women had undertaken post-graduate training in Connecticut ($X^2=13.685$, $p<.001$, 2 df). As region of graduate medical education has been identified as a strong predictor of subsequent practice or work location, this increasing trend may result in a relatively higher concentration of women doctors in the state.

As noted in Table 1, nearly 55 percent of the respondents resided in Connecticut at the time of the survey. The follow-up of the non-respondents indicated that the respondents overrepresented Connecticut residents. It is quite likely that women physicians living in Connecticut may have regarded the study with

greater interest, which would explain their higher response rate.

A further breakdown of the distribution of the respondents' residence at the time of the survey is given in Table 2. The regions are those delineated by the Bureau of the Census. As previously stated, 55 percent of the respondents were residents of Connecticut; the Mid-Atlantic states accounted for the second largest percentage, 16 percent, of respondents, followed by the remaining New England states.

The distribution of residents within the state, in 1973, is shown in Table 3. In 1973, Connecticut ranked among the states with the highest ratios of women physicians relative to the total population of the state.¹⁴ The relatively higher concentration of women doctors in the Hartford and New Haven areas in relation to the size of the population most likely is associated with the location of the two medical schools in Connecticut as well as with employment opportunities in the State Department of Health in Hartford.

Among the respondents residing in the Southwestern part of the state, several reported maintaining practices both in Connecticut and New York State.

Graduate Medical Education

Virtually all the respondents attended medical school and completed internships and residencies on a full-time basis, while 11 percent of those reporting additional training had undertaken this training on a part-time basis.

A total of 94 percent of the respondents reported completing internships, and 88 percent reported at least one residency. The proportion of respondents reporting internships and residencies was highest among the most recent graduates, 98 and 94 percent, respectively, while that in the middle group was 97 and 91 percent. The lowest rates were found among the oldest graduates—91 percent reported completing internships and 78 percent had completed residency

Table 1
LOCATION OF EDUCATION, TRAINING, AND CURRENT RESIDENCE

Region	Medical School	Internship	Residency	Postdoctoral Training	Additional Training	Other Training	Current Residence
Connecticut	35 (9.5)	79 (22.6)	101 (30.6)	31 (22.0)	30 (27.5)	21 (28.4)	204 (54.9)
Other U.S.	264 (71.3)	244 (67.9)	212 (64.2)	100 (70.9)	73 (67.0)	37 (50.0)	166 (44.6)
Outside U.S.	71 (19.2)	27 (7.7)	17 (5.2)	10 (7.1)	6 (5.5)	16 (21.6)	2 (0.5)
Total	370* (100.0)	350* (100.0)	330 (100.0)	141* (100.0)	109 (100.0)	74 (100.0)	372* (100.0)
*No response	3	1		1			1

Table 2

RESIDENCE AT THE TIME OF THE SURVEY, BY YEAR OF GRADUATION

Area of Residence	Year of Graduation			Total
	1915-44	1945-59	1960-71	
Connecticut	54 (50.5)	78 (51.2)	72 (63.2)	204 (54.9)
Other New England	13 (12.2)	10 (6.6)	8 (7.0)	31 (8.3)
Mid-Atlantic	15 (14.0)	33 (21.8)	13 (11.4)	61 (16.4)
South Atlantic	5 (4.7)	7 (4.6)	2 (1.8)	14 (3.8)
East/South Central	2 (1.9)	1 (0.7)	3 (2.6)	6 (1.6)
East/North Central	3 (2.8)	4 (2.6)	2 (1.8)	9 (2.4)
West/North Central	1 (0.9)	3 (2.0)	2 (1.8)	6 (1.6)
West/South Central	2 (1.9)	—	3 (2.6)	5 (1.3)
Mountain	3 (2.8)	2 (1.3)	4 (3.5)	9 (2.4)
Pacific	8 (7.5)	13 (8.6)	4 (3.5)	25 (6.7)
Outside of U.S.	1 (0.9)	—	1 (0.9)	2 (0.5)
Total	107 (100.0)	151 (100.0)	114 (100.0)	372* (100.0)

*missing information for one respondent

Table 3

NUMBER OF RESPONDENTS BY CONNECTICUT REGION*

	Litchfield Hills/ Northwestern	Capitol Health Planning Council	Windham-Northeastern	Southeastern	Mid-State Conn. River Estuary	Meriden-Wallingford	South Central Conn.	Central Naugatuck Valley	Housatonic Valley- Putnam Community	Greater Bridgeport	Southwestern	Total
No.	4	52	4	16	6	6	59	7	9	10	31	204
%	2.0	25.5	2.0	7.8	2.9	2.9	28.9	3.4	4.4	4.9	15.2	100.0

*Comprehensive Health Planning Regions of Connecticut

training. These findings corroborate those of, for example, Powers et al., who found that a higher percentage of the oldest graduates in their survey had no further training after the internship.

Beyond medical training, ten percent of the women had obtained master's degrees, most frequently in public health, while three percent held doctorates in other fields.

Specialization and Certification

Previous studies have confirmed the concentration of women physicians in certain specialties. Dykman and Stalnaker found that 54 percent of the women physicians in their sample reported specialties in the following order: pediatrics, psychiatry, pathology, obstetrics/gynecology, internal medicine, and anes-

Table 4
AREAS OF SPECIALIZATION

<i>Specialty</i>	<i>Internship</i>	<i>Residency</i>	<i>Postdoctoral</i>	<i>Additional Residency</i>	<i>Other Specialty</i>	<i>Current Specialty</i>	<i>AMA Data (% only)</i>
Anesthesiology	2 (0.6)	22 (6.8)	1 (0.7)	5 (4.6)	1 (1.4)	20 (5.4)	— (10.6)
General Practice	7 (2.3)	4 (1.2)	0 (0.0)	0 (0.0)	3 (4.2)	26 (7.0)	— (15.8)
Internal Medicine	58 (18.8)	63 (19.5)	30 (21.1)	13 (12.0)	7 (9.7)	44 (11.8)	— (9.7)
Obstetrics/Gynecology	3 (1.0)	18 (5.6)	1 (0.7)	3 (2.8)	4 (5.6)	18 (4.8)	— (9.0)
Pathology	6 (1.9)	19 (5.8)	8 (5.6)	9 (8.3)	4 (5.6)	18 (4.8)	— **
Pediatrics	49 (15.9)	95 (29.4)	28 (19.7)	19 (17.6)	6 (8.3)	91 (24.4)	— (17.6)
Psychiatry	4 (1.3)	49 (15.2)	15 (10.6)	27 (25.0)	13 (18.1)	56 (15.0)	— (18.3)
Radiology	0 (0.0)	11 (3.4)	5 (3.5)	4 (3.7)	0 (0.0)	18 (4.8)	— (3.0)
Other	180 (58.2)	42 (13.0)	54 (38.0)	28 (25.9)	34 (47.2)	82 (22.0)	— (16.0)
Total	309* (100.0)	323* (100.0)	142 (100.0)	108* (100.0)	72* (100.0)	373 (100.0)	— (100.0)
*No response	42	7		1	2		

**Included in 'Other' category

siology. Powers et al., reported on specialty certification, rather than self-declared areas of specialization, and found that two thirds of the women with specialty certification were in pediatrics, psychiatry, internal medicine, and anesthesiology.

Table 4 presents an overview of specialization during internship and residency, as well as during subsequent additional training, of the respondents in the present survey. Columns six and seven of Table 4 provide information on the respondents' specialty at the time of the survey and a comparison with 1973 American Medical Association data on specialization of female physicians nationwide.¹⁵ As there were differences in the sample selection and size between the present survey and that of the AMA, the information is presented only for purposes of general comparison.

In the present survey, nearly 60 percent of the respondents reported the following specialties at the time of the survey, in descending order: pediatrics, psychiatry, internal medicine, and general practice. An additional 20 percent had specialized in anesthesiology, obstetrics/ gynecology, pathology, or radiology. There was some variation in the percentages between reported specialization during residency training and specialty at the time of the survey; however, the differences were not tested for significance but were relatively small and may be attributed to the fact that some women reported changing their specialty in order to cope with career and family responsibilities.

Due to the small number of respondents in certain specialties, no test of significance was applied with respect to differences among the three age groups. However, actual differences among the percentages in the respective specialties by age group were minor.

Marital status was found to be related to specialization; a significantly higher percentage of married women reported specialties in pediatrics and psychiatry, whereas the highest proportion of single women reported specialization in internal medicine, family practice, or obstetrics and gynecology as a combined category ($X^2=18.36$, $p=.006$, 6 df).

Overall, 46 percent of the respondents reported being board certified. Significant differences were observed between certification and year of graduation; the highest percentage of certified physicians was found among the oldest graduates ($X^2=7.044$, $p=.03$, 2 df). The overall proportion of respondents reporting certification in the three groups was as follows: 54, 48, and 36 percent, respectively. With respect to specialty, the highest rate of certification, 67 percent, was reported by the radiologists, followed by pediatricians, 64 percent, and anesthesiologists, 55 percent. The lowest rates of certification were reported by the respondents in internal medicine, obstetrics and gynecology, and psychiatry. Comparisons between these rates and those obtained in a survey of women doctors by the American Medical Association revealed few differ-

ences. It is likely, also, that some of the women in the present survey are board qualified.

In view of the finding that a lower proportion of the oldest graduates tended to have completed internship and residency, it is interesting to note that the oldest group accounted for the highest rates of certification and of additional training such as in public health. It is not clear whether the relatively lower rate of certification among the respondents in the middle group is related to sampling or to a slightly higher percentage of foreign medical graduates in this group. It is probable, however, that women in the *youngest* group are in the process of becoming certified after completing their residencies.

Discussion

The results of the survey findings on the characteristics of respondents, the location of their medical schools and subsequent graduate medical education and specialization indicate that the major changes that have occurred over time with respect to the characteristics of women physicians in this survey are the increasing trends toward combining a career with marriage, earlier marriage, and having children. Comments furnished by several of the older respondents, in particular, suggest that marriage and children were thought to be incompatible with a career in medicine for women. Many of the women reported having been counseled against entering medicine because of the difficulties of combining the dual responsibilities of family and career—"I was told that I had no right to apply to medical school, if I also expected to have children." Increased consciousness of discriminatory practices in recent years is likely to have lessened the extent of discrimination towards women applicants to medical schools, although subjective accounts of such practices were reported in the present survey and have been detailed in previous reports.¹⁶

The survey results confirm the tendency of women physicians to cluster in certain specialties, notably pediatrics and psychiatry. In the words of one respondent, her chosen specialty—psychiatry—"would lend itself better than some to marriage and family." It was also clear, however, that some women had chosen disciplines unrelated to other demands on their time—"specialty choice was not conflict resolution, as this was my preference without compromise."

The pattern of specialty concentration parallels the pattern of occupational sex typing and concentration among women in the labor force. Of interest also is that the specialties women enter tend to be among the least remunerative, and women, in addition, are reported to earn substantially less than their male counterparts, even when their fewer hours per week are taken into

account.¹⁷ This differential may to a great extent be due to factors related to their patterns of practice, which are described in Part II of this report.

An examination of the location of their education and training indicates that only a small proportion of the respondents had attended medical school in Connecticut. In addition, the women who completed internships and residencies in the state tend to have done so only during the most recent decades. In the last few years, however, there has been a marked increase in the number of women students admitted to, for example, Yale University School of Medicine. Women constituted 28 percent of the entering class of medical students at Yale in 1975 and 30 percent of the entering class at the University of Connecticut Medical School in the same year.¹⁸ Nationwide, women comprised 24 percent of the first year class in 1975.¹⁹ Thus, Connecticut's two medical schools accounted for some of the highest ratios nationwide of female to male medical students in the first year class in 1975.

A separate survey concerning trends in the location of graduate medical education of the women graduates of these two schools revealed that, over an 8 year period, 25 percent of the Yale women graduates remained in Connecticut in their first year of graduate medical education. Of the University of Connecticut graduates, 36 percent remained in the state from the four classes graduated to date (See Appendix I).

Further, while an examination of the proportion of women doctors among the house staff at Yale New Haven Hospital over the last decade shows a relatively small increase between 1966 and 1974, from 4-8 percent, women constitute 18 percent of the new house staff in 1975-76. (See Appendix I.) Thus, proportionately, there is a substantial increase both in the percentage of women in medical school, and the proportion of women undertaking graduate training in Connecticut hospitals.

A number of factors have been identified as predictors of physicians' choice of practice location.²⁰ Among such factors are the location of medical school and graduate medical education, and specialty. As analyses of such predictors have been undertaken at a time when women constituted a smaller percentage of the medical profession than recent trends indicate, a comparative, prospective, survey of male and female medical school graduates would identify whether the predictor variables differ between male and female physicians and the extent to which variables relating to marital status and the presence of children determine both specialty choice and the location of practice.

Part II of this report documents the employment history of the women surveyed, including their professional activities over time, interruptions and conflict resolutions in their careers, as well as the kind of

Appendix I

GEOGRAPHIC DISTRIBUTION OF INTERNSHIP/FIRST YEAR OF GRADUATE MEDICAL EDUCATION, BY WOMEN GRADUATES

	Yale School of Medicine								UCONN Health Center			
	1975	1974	1973	1972	1971	1970	1969	1968	1975	1974	1973	1972
Alabama	1											
Arizona	1										1	
California	2	3	3		1		1		1		1	
Colorado				1								
Connecticut	5	1	3		3	2	1	2	2	1	2	
D.C.	1				1			1	1			
Georgia	1											
Hawaii							1					
Illinois	1											
Indiana		1										
Kentucky								1				
Louisiana					1				1			
Maryland				1	1			1				
Massachusetts			1			1			1	1	1	
Michigan								1			1	
New Mexico				1								
New York	3	1	3		1	1	1					
Ohio	1				1							
Pennsylvania	1			1	1	1	1					
South Carolina	1											
Tennessee								1				
Texas		1										
Wisconsin										1		
No internship							1					
Total	18	7	10	4	10	5	6	7	6	3	4	1

Source: Office of Regional Activities and Continuing Education, Yale School of Medicine, September 1975

needed supportive services identified by some of the respondents.

Acknowledgement

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Appendix I

NUMBER OF WOMEN ON YALE-NEW HAVEN HOSPITAL HOUSE STAFF, 1966-1975

	Yale-New Haven Hospital House Staff									
	1975-76	1974-75	1973-74	1972-73	1971-72	1970-71	1969-70	1968-69	1967-68	1966-67
TOTAL STAFF	316	290	282	266	262	276	268	255	247	228
Continuing from previous year	179	176	173	149	138	140	143	129	113	111
New Staff	137	114	109	117	124	136	125	126	134	117
Women PG 2*	8	1	4	5	4	7	5	3	4	0
Women PG 1*	17	8	2	5	6	3	4	3	4	5
Total Women										
New Staff	25	9	6	10	10	10	9	6	8	5
%Women on New Staff	18%	8%	6%	8%	8%	7%	6%	5%	6%	4%

* Post-Graduate Education Year

Source: Office of Regional Activities and Continuing Education, Yale School of Medicine, September 1975

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CURRENT TRENDS
THE PUBLIC HEALTH IMPLICATIONS OF HEPATITIS B ANTIGEN
IN HUMAN BLOOD—A REVISED STATEMENT¹
 by
The Committee* on Viral Hepatitis
 of the
Division of Medical Sciences
NATIONAL ACADEMY OF SCIENCES—NATIONAL RESEARCH COUNCIL

A clearer definition of the significance of viral hepatitis type B as a clinical and public health problem has arisen from the discovery, development, and widespread application of various serologic tests for the presence of an antigen—hepatitis B antigen²—that is associated with the disease. The demonstration of the antigen in the blood of a patient or of an apparently healthy person raises questions not only of the presence of active liver disease, but also of the potential risk of transmission of the infection to others. It is now recognized that, in addition to the well-established parenteral mode of transmission, viral hepatitis type B can be transmitted by other means.

On the basis of information acquired from clinical and epidemiologic studies and from antigen testing programs, the Committee on Viral Hepatitis finds that:

1. A confirmed positive test for antigen is indicative of acute or chronic viral hepatitis type B or of an asymptomatic carrier state.
2. The presence of the antigen in the blood of a patient with acute viral hepatitis type B is usually transient. If it persists for more than 3 months after the onset of illness, the person is likely to become a chronic carrier of the antigen.
3. A chronic carrier of the antigen may or may not have demonstrable evidence of related liver disease.

4. The occurrence of acute hepatitis type B or an asymptomatic carrier state during pregnancy or even during the first 2 months post partum is frequently associated with later infection in the newborn infant.

5. There is clear evidence that carriers should be prohibited from donating blood for transfusion.

6. Although the infectiousness of patients with antigen-positive hepatitis apparently diminishes when the antigen is no longer demonstrable in the blood, they are currently not accepted as blood donors.

7. There is insufficient knowledge of the extent to which chronic carriers can transmit hepatitis type B by nonparenteral routes. However, close contacts of some categories of chronic carriers, such as renal dialysis patients, are at increased risk for hepatitis type B infection.

8. With respect to risk of transmission to others, there is no indication at this time that routine antigen testing of any specific professional or occupational group should be required.

9. Standard Human Immune Serum Globulin (ISG) is of no demonstrable value in the treatment of carriers.

10. There is insufficient evidence on which to recommend the use of standard ISG for prophylaxis among contacts of hepatitis B patients or carriers. Studies of the possible prophylactic effect of hepatitis B hyperimmune serum globulin are currently in progress.

The Committee recommends that:

1. Persons found to have a positive antigen test in the course of diagnostic studies, blood-donor testing, or testing after known exposure to infection with hepatitis type B be so informed and the test be repeated promptly; and persons with a confirmed positive test be evaluated for the presence of liver disease and followed to determine whether the antigen persists.

2. Persons with antigen-positive hepatitis be considered infectious and control measures be taken with respect to potentially infectious materials, such as blood and blood-contaminated secretions.

*S. Krugman, New York University School of Medicine, New York, New York, Chairman; M. B. Gregg, Center for Disease Control, Atlanta, Georgia; E. A. Kabat, Columbia University, College of Physicians and Surgeons, New York, New York; R. W. McCollum, Yale University School of Medicine, New Haven, Connecticut; J. L. Melnick, Baylor College of Medicine, Houston, Texas; A. G. Redeker, University of Southern California, Los Angeles, California; and P. E. Taylor, Laboratory Centre for Disease Control, Ottawa, Canada.

1. For original statement, see MMWR, Vol. 21, No. 16, 1972.

2. This antigen was originally referred to as Australia antigen.

H.E.W., Public Health Service, Atlanta, GA.

Medical Communication Sources for Continuing Physician Education: Used or Unused?

Jerome J. Harris, Ph.D.

Abstract—Studies attempting to evaluate physician postgraduate acquisition of information and education have been supported by pharmaceutical companies, medical journals, and a variety of other publications and interested concerns. The amount and type of medical journals read, refresher or postgraduate courses attended, attention to detailmen, direct-mail promotion, attendance at conventions and society meetings, discussions with colleagues, and use of radio, recordings, or television are among the many methods that have been examined.

In this study, the varieties of communication services or sources available to the physicians was examined.

It is apparent that probably more information is communicated in more varied ways to the medical profession than to any other group in our society. However, it is also apparent that despite the mass of available material the average physician is not utilizing these sources and is thus being inadequately informed.

The field of postgraduate or continuing medical education has drawn our attention for a number of years, since for the most part, it parallels the chronological development of communication methods in general.

The idea of continuing education is certainly not a new concept to medicine. As early as 1898, the courts pointed out physicians have a duty to keep up with medical developments and advances. This ruling particularly applied to specialists where the judiciary felt patients consult a specialist because they assume the specialists are more aware of recent developments.

Continuing medical education is a period of study where physicians maintain their competence. In contrast to the undergraduate and graduate phases, it is informal and highly individualized with physicians determining the type and extent of their educational activities.

No week passes without the postman delivering notices about courses available somewhere. Journals

publish lists. Insurance companies, foundations and pharmaceutical manufacturers offer programmed texts and other materials in postgraduate medical education. And yet, with all the courses and materials available, postgraduate education for the medical practitioner is still fragmented.

Therapeutics was fairly simple and straightforward for the physician until 1940. The advent of the so-called "miracle drugs," changed things drastically and medical schools geared themselves to the new drugs, new methods and new technologies.

As a matter of fact, the U.S. physician today has a therapeutic arsenal of some 1200 different drugs, exclusive of some 6000 combinations. About 70% of these drugs were either unknown or unavailable 15 years ago when more than ½ of today's practicing M.D.'s were taking pharmacology in medical school.

The question arises: Is it possible for a productive physician to keep abreast of new developments and a medical literature that doubles in size every fifteen years and shows evidence of continued growth?

It is no longer possible for the physician to keep up without help, even in a specialty field. For example, a dermatologist could not digest all the articles cited in each issue of the monthly *Index of Dermatology*, published with the cooperation of the National Library of Medicine. In fact, reading an entire year's scientific publications would take half a century for an average reader. To accomplish this feat, one would have to read 24 hours a day, 7 days a week.

Surveys attempting to evaluate physician postgraduate acquisition of information and education have been supported by pharmaceutical companies, medical journals, and a variety of publications and interested concerns. The amount and type of medical journals read, refresher or postgraduate courses attended, attention to detailmen, direct-mail promotion, attendance at conventions and society meetings, discussions with colleagues, and use of radio, recordings, or television are among the many methods that have been examined.

Survey of Studies

An analysis of major studies 1940-1969-1973 reveals that physicians acquire most of their information from detailmen, journals, direct-mail, and colleagues, rather than through formal educational sources. A comprehensive survey in 1955 by Vollan on the scope of

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postgraduate medical education in the United States was very extensive and despite its 20 years the results are still applicable today.

According to Vollan:

There are five types of activities which physicians use to continue their education: 1) Reading of medical books, monographs, periodicals, and the literature physicians receive from pharmaceutical firms; 2) Professional contacts between the physician and his colleagues, med. reps., consultants and pharmacists; 3) Attendance at hospital meetings, such as staff clinicopathological and radiological conferences, and journal club meetings; 4) Attendance at National, state and local society meetings; and 5) Attendance at formal postgraduate courses.

Activities, such as research, patient study, teaching, preparation of medical articles, and visits to medical centers, were not included nor has the role of the 50,000,000 patients on the prescribing habits of the 300,000 physicians been examined.

The most recent AMA survey on obtaining new drug information (June, 1973) shows that today's physicians differ only in emphasis from Vollan's survey of 1955.

Reading as a Source of Information

According to Vollan, every conscientious physician maintains a library of basic medical books for ready reference, supplemented by new monographs and texts or by use of a public, medical school or hospital library. There are some 22 or more medical publishers.

Periodicals

While acknowledging the difficulty of defining what a medical periodical is, Dr. Cummings, Director of the National Library of Medicine, believes there are more than 50,000 scientific journals publishing more than 2,000,000 articles annually and that there must be at least 5,000 (1,500 in the United States) substantive biomedical journals in a current total of 18,000 known to the 5,000 medical libraries in the United States.

Types of Journals

The journals vary in emphasis, content, and circulation; there are: *mass-circulation medical journals* with (free) or paid circulation of 130,000 to 200,000.

Non-specialty journals with a circulation of 25,000 to 75,000. *State, and regional journals; county and city bulletins; allied professions journals* include osteopathy, med. educ., nursing, pharmacy, dentistry, hospital administration and finally, "*policy journals*" published for political or promotional purposes.

National journals such as J.A.M.A. usually present contributions in research, abstracts of articles from American and foreign periodicals; current medical and scientific news; experimental aspects of medicine; a

question and answer or correspondence section; book reviews; and reactions to medical meetings, medical advertisements, obituaries and case studies.

Most recently, a series of *specialty digest journals* have appeared. Some of these digests also include original articles, book reviews, announcements, and new drug and legal sections.

Other specialized journals, Medical World News, a free biweekly magazine, with a format similar to Time, attempts to cover items of specific interest to physicians; financial journals, hobbies, sports and Physicians World, a new journal (Oct. 1973) (covering contemporary life in a changing environment) and the AMA's new "Prism" which covers all issues of public policy related to the pros and cons of medicine.

Another so-called informative or educational source is the journal advertisement. Unlike "lay" journal advertising, they must pass muster before the FDA and the journal's editorial board before being published. Some "surveys seem to indicate that medical journals are, in many instances, the leading factor in bringing knowledge of products to physicians and convincing them to prescribe such products."

Newspapers

There are also the widely circulated tabloid-type medical newspapers such as Medicine Tribune, the AMA News, American Medical News Digests of Specialty News and manufacturers news digests of drug-related products. These newspapers, initiated around 1957, are circulated weekly, biweekly, or bimonthly and report research developments, timely medical news, medical socioeconomic issues, and leisure-hour items.

Commercial source reference manuals, like those published by Schering and Roche: Company magazines, house organs or bulletins also serve as educational matter. A few companies have even gone into publishing. The Merck Manual and Index and the Ciba Foundation Books are typical.

Direct Mail

Direct mail is considered an influential means for providing the physicians with continuing medical education. These may include letters, house organs, brochures, reprints, periodicals, announcements, medical newspapers, hardcover books providing comprehensive reviews of drugs, and samples of drugs accompanied by literature.

Oral Sources of Information

An important oral source of information for a physician are his colleagues.

In 1959 Coleman, Menzel, and Katz studied the sociological factors involved in a physician's adoption of a new drug, they found that "Doctors who share

offices introduce the drugs an average of two and three-tenths months sooner than their colleagues who practice alone."

Ferber and Wales in a 1958 study found that detailmen, in addition to journals, etc. constitute a principal source of physicians' knowledge of pharmaceuticals.

According to Vollan, "The representatives of pharmaceutical firms enjoy an ideal pedagogical situation in their interviews with physicians."

Meetings, Conventions, and Exhibits

Attending medical meetings is another way in which physicians keep abreast of new developments. As members of medical societies, physicians are requested to attend meetings (national, state, and county). They range from two to five days.

Hospitals

Among other types of meetings are the non-organizational local hospital meetings which are usually attended for accreditation, but often deal with administrative matters rather than medicine. The average physician sometimes finds the larger teaching hospitals conferences too technical or specialized.

Formal Postgraduate Education Had Its True Beginnings in the Late 30's and Early 40's

Actual figures on physicians taking postgraduate medical courses can only be estimated since no formal examination of attendance has yet been made. In general, half the courses have been designed for specialists and half for general practitioners or both. Categories in order of interest for 1974, include internal medicine, general medicine, surgery, psychiatry, pediatrics, radiology and radioisotopes, ophthalmology and pathology. Courses are offered by medical schools; national medical organizations; hospitals; state, county and local societies. Physicians can learn of the formal courses offered (including hours and locales) for postgraduate medical education by reading the annual (usually mid-August) continuing medical education issue of J.A.M.A.

According to estimated attendance figures in the listing, the most popular courses are those from one to three days, and the most preferable are "didactic" where the student plays a passive role in the learning process by listening and observing i.e. Direct—lectures, panel discussions, demonstrations; or Indirect—tapes, television, radio, telephone, recording. The greatest interest apparently lies in general review or refresher courses.

Of the 697 institutions, hospitals, societies and organizations offering 2,441 courses, 32 will use some television in their courses (127 of the 2,441 courses) for 1974. Despite this large number of postgraduate

courses at medical schools, only a relatively small percentage of doctors attend.

Informal Miscellaneous Sources

In addition to the formal and informal means of acquiring medical knowledge discussed thus far, physicians also have available large numbers of medical information or abstracting services. One of the largest services available being the National Library of Medicine.

More specifically, the National Institute of Health has a cardiovascular research project center, which publishes an index handbook of cardiovascular agents. Through its cancer chemotherapy information center and psychopharmacology service information center, NIH also provides abstracts within six weeks of the original article listing author and subject.

The physician may also subscribe to the Medical Letter of Drugs and Therapeutics. Published bimonthly by a nonprofit corporation, the Letter purports to provide physicians with objective appraisals of new drugs.

In addition, there is Clin-Alert, a card service provided by the National Clearing House for Poison Control Centers which furnishes information on the toxic effects of various therapeutic agents.

Literature supplied by the various drug companies likewise must be considered as informational or educational, since the descriptive content is based on FDA approval.

Moreover, correspondence between physician and pharmaceutical companies on drugs, their applications, or even generalized questions can also be considered as an informal educational source.

Recordings by Subscription

Medical recordings and tapes have been sold by subscription to the profession.

The American College of Surgeons have made available their panel discussions "Clinitapes" which can be purchased cheaply and played on any cassette tape machine.

A few years ago a transatlantic telephone discussion between American endocrinologists and European colleagues in Amsterdam on the effects of estrogens in the menopause was recorded.

Other Audio or Visual Services

Albany Medical College through station WAMC, New York broadcasts a 2-way radio conference among several associated hospitals. The technique consists of a panel discussion or a lecture followed by a forty-minute question period. Physicians in the radio-connected hospitals telephone their questions through a moderator. The panelists then answer the question

on the air. Programs have been held weekly for twenty-four weeks during the year.

The U.S. Department of Health, Education and Welfare, through the Federal Advisory Council on Medical Training Aids, offers a film reference guide for medicine and allied services. Revised annually, the guide, in addition to technical information (sound, silent, color or black and white, viewing time, number of scenes), describes the film content and presents information on distributors and methods of procurement.

Medical slide libraries sponsored by pharmaceutical companies (Schering, Ciba, et al.) provide slides at cost to the physicians.

Commercially Sponsored Educational Programs

Seminars, conferences, and symposia have been sponsored by pharmaceutical companies like Schering; Roche; Merck, and others. Most seminars or round table discussions are devoted to a single field of therapy and may or may not be related to the sponsoring company's products. These seminars are regional in character in that local medical societies hold them. There is an average of 8 to 12 seminars a year with an average attendance of 250 to 300 physicians.

Programmed instruction is also offered for continuing medical education. The average course requires three to five hours of physician study.

The use of teaching machines in a continuing education program has been conducted by the Massachusetts chapter of the American Academy of General Practice at the NewtonWellesley hospital in Boston (1972). Approximately 200 physicians were invited to participate. The course was a programmed instruction film strip on "Diabetes Control, A Review Course."

Television has been used intramurally and extramurally for postgraduate medical education on closed and open circuit since February, 1947 (when Johns Hopkins telecast a surgical operation on closed-circuit).

Dermatology, being a truly visually-oriented specialty of medicine, has explored bidirectional interactive television as a means of extending the eyes of the dermatologist to provide consultation services to patients many miles away. A report in 1972 in *Arch. of Derm.* noted that experiments have been carried out over the past five years, first at the Logan International Airport and later at the Veteran's Hospital

in Bedford, Massachusetts, to determine the feasibility of television diagnosing and managing dermatologic disorders. The experiments appear to be successful.

Recent Developments

More recent developments include new therapeutic film showings at national meetings (Schering-Skin Diseases, Asthma, Hypertension), video-cassettes (surgery, psychiatry, etc.) that can be viewed through home TV (Primary Med. Communications, N.Y.C.) Univ. of Pitt. Med. AV programs, cable TV, teleconsultation, tapes and cassettes on various indications.

Most recently mediphone has been introduced. Originally initiated in Chicago in 1972, it has just become a nationwide physicians information service (physician to consultant specialists—600 from 60 major university medical centers) on difficult or perplexing problems, \$15.00 for 5 minutes.)

An April 3, 1974, *Psychiatric News* noted that Maryland's first school for the continuing education of mental health was initiated last October through Horizon Center in Baltimore and that the courses are designed to meet Maryland's laws requiring continuing physician education.

Yet, despite all these developments, according to reports from the 1972 annual conference on medical research in education sponsored by the Assn. of Amer. Med. Colleges, many of the available opportunities for Continuing Med. Education (CME) are barely being used by the average physician.

Examination of the "potpourri" of sources and their wide varieties of offerings makes one realize how difficult it is for the practicing physician to choose a method for keeping abreast of biomedical advances without neglecting his practice in the effort. Yet there is no question the physician must acquire this new knowledge as it becomes available if he wishes to provide the best medical care for his patients.

The need for CME is great and as Mr. MacCahal, publisher of a new medical journal entitled "Continuing Education" stated in his first issue, August, 1973, "Educational concepts and the ambience of medicine change from time to time. The present status of medical practice and medical education present a crying need for continuing education. Twenty years from now the situation will likely be different and the need may no longer exist. But right now the need is real and urgent."

References are available from the author on request.

Grief and the Primary Physician

Austin McCawley, M.D.

It has been said that the most difficult task a doctor will ever have is to tell someone they are going to die. This statement is probably true but, sometimes, it is even more difficult to stay with the patient and family through the period of grief and bereavement: through what Alan Gregg called the "thousand goodbyes that come after death—the first six months of bereavement."¹

There is an extensive literature on the subject of grief and bereavement but it is addressed principally to psychiatrists, social workers, clergy and pastoral counsellors. There is little written from the standpoint of the primary physician and this is curious because he is often the person who deals most directly with the problem. Although many of the problems of grief are psychological, the primary physician may be in a better position than the psychiatrist to help the family.

When a patient is referred to a psychiatrist, the first stages of treatment are directed to establishing a relationship, getting historical background and acquiring psychological understanding of the patient and family. It is insufficiently appreciated that the family practitioner is already at this point and although his psychological formulation may lack the finesse (jargon?) of the psychiatrist it may be more promptly translated into effective action.

In regard to the problems of bereavement, the primary physician can make an enormous contribution to the welfare of his patients if he is aware of the pervasive effects of grief; conversely, the damage done by poor handling or, as is more commonly the case, avoidance of the matter adds to an intolerable burden.

Grief as a Syndrome

Grief can be defined as the emotional suffering caused by loss of a loved one or some other particularly valued object on which we depend for sustenance and security. It is essentially a working-through process by which we eventually relinquish ties to the lost person, substitute memories and accept the loss.

Bowlby² has described three stages of grief: an initial stage of numbness, followed by a disorganization of feeling and behavior and then a stage of reorganization. An individual may become fixated at either of the first two stages; sometimes he may appear to have reached the third stage of reorganization but is only maintaining a facade, which is likely to break down under stress.

Erich Lindemann,³ in a pioneer work, studied the experiences of those who lost relatives or friends in the tragic Cocoanut Grove fire in Boston and identified acute grief as a definite syndrome with psychological and somatic manifestations. Individuals suffering from acute grief show a marked tendency to a sighing respiration, especially when discussing their grief, lack of strength to the point of exhaustion and digestive symptoms such as inability to eat, repugnance toward food and abdominal discomfort. They feel detached and unreal, are intensely preoccupied with the image of the deceased and are tormented by guilt and self-recrimination. They show a loss of warmth for others and a disposition to react with irritation and anger. Restless and aimlessly active, they search for something to do but lack the initiative to follow anything through. They may pursue their daily routine but find it meaningless and an effort.

When the loss is less sudden and dramatic than the tragedy Lindemann described, the symptoms will probably be less acute but the psychological problems are basically the same. Lindemann has pointed out that grief reactions may be delayed or postponed in which case more extreme reactions that represent distortions of the mourning process are likely to appear later on.

Distortions of Normal Grief Reactions

Delay or postponement of mourning is more likely to occur if the person has responsibilities for others and cannot afford to let go. The individual shows little or no reaction and goes about his business as if nothing had happened. In some cases he may show some indication of grief but covers up in an imitation of the reorganization described by Bowlby, only to develop problems later on. A subsequent breakdown under stress may be a reenactment of grief over a person who died years ago.

Physical symptoms of all kinds may have their origin in unresolved grief. These include psychosomatic disturbances, hypochondriasis, conversion symptoms and even somatic delusions. Sometimes the underlying psychological mechanisms are obvious as in the case of the young girl who developed a conversion blindness after witnessing the death of her father; sometimes they are less simple as in the psychosomatic disorders such as rheumatoid arthritis, ulcerative colitis, asthma, hyperthyroidism and others. The condition of "burning mouth" (ideopathic glossodynia) should be mentioned as it seems to be associated with recent loss.

It is not uncommon for patients to identify with and reproduce the physical symptoms of the deceased.

DR. AUSTIN McCAWLEY, Director, Department of Psychiatry St. Francis Hospital, Hartford.

Identification with the deceased is one of the important psychological mechanisms by which the individual handles loss and represents a way of trying to hold on to the departed.

The most important psychiatric disturbances associated with grief are the depressive reactions. These are characterized by feelings of sadness or depression, loss of energy and initiative, agitation or retardation, loss of interest in usual activities, insomnia, anorexia, weight loss, self-reproach or guilt and recurrent thoughts of death or suicide. The patient may be actively suicidal.

Some people show an emotional anesthesia which may persist for years, especially when losses are severe and sustained as in the case of survivors from the concentration camps.

The reaction to loss may be a factor in precipitating most of the conditions listed in the psychiatric diagnostic manual, including acute schizophrenic reactions and even organic brain syndromes. We see cases of elderly people with chronic brain syndromes who cope fairly well until the loss or anticipated loss of a loved one and then decompensate rapidly. Other patients show behavioral upsets including addiction to sedatives and alcohol, promiscuity and other self-destructive acting out, including reckless disregard of property and business.

Perhaps most difficult for physicians is the projection of anger and blame onto others who may be bitterly accused of responsibility for the death or other injustices.

The Work of Mourning

The bereaved individual has to accustom himself to living without the one he has lost, without that special support, comfort and love. He has to relinquish those emotional ties and investments which have lost their meaning because they are attached to a memory rather than a living person. He also has to resolve whatever conflicts there may have been in the relationship. All love relationships contain elements of conflict and hostility; because there are no perfect people there are no perfect relationships. When someone dies the survivors always feel a certain amount of guilt; they may accuse themselves of insufficient consideration for the deceased, things done and not done, angry words or perhaps angry feelings that were never even expressed. In the normal work of mourning these guilty thoughts and self-accusations are dealt with realistically and the bereaved, realizing that all human relationships are marred by friction, finally is able to accept his loss.

When the hostility is great, however, or the neglect or injury to the departed is real then the person has a more difficult time. Even more conflict-ridden are

those grief reactions which ensue when the relationship has been highly ambivalent. In this case the result may be the development of a clinical depression. In a classic work, *Mourning and Melancholia*, Freud⁴ first described the psychological process of mourning and its connection with depression. He called the process by which ties are loosened, hostilities resolved and emotions reinvested, the "work of mourning."

Cultural rituals after death are very important supports for the bereaved. They provide a culturally sanctioned outlet for emotion and the occasion for friends and relatives to come together in a reaffirmation that life goes on and other friendships survive. The bother of making the necessary arrangements and going through the prescribed forms is not simply a distraction from grief; rather it gives a concrete expression to the work of mourning in the actions so well described by Emily Dickenson:⁵

The Bustle in a House
The Morning after Death
Is solemnest of industries
Enacted upon Earth—
The Sweeping up the Heart
And putting Love away
We shall not want to use again
Until Eternity.

The Role of the Physician

Ordinarily the bereaved person will not turn to a professional for help and when he does he will not identify the problem as grief. He may not even mention the recent loss. Rather he complains of depression, work difficulties, fatigue, anxiety, suicidal thoughts or psychosomatic symptoms. He may complain of the aggravation of a pre-existing illness, following the death of a loved one. Sometimes the family physician may not be formally consulted but because of his ongoing relationship with the family, see the need for intervention. In this case he should take the initiative, as tactfully as possible.

The physician is more important to patients and their families than often he realizes and he can influence the course of events in very significant ways. His relationship is a professional one and therefore he is someone on whom the patient can unload. When the patient is unable to sound off to the rest of the family, what is said in the office may be a pure distillate of repressed grief and has to be evaluated in that context. Dr. James Mathis tells the story of a woman who, although faced with an intolerable situation, was able to put on an excellent front—until she came to his office. She arrived for appointments looking immaculate but emerged from the office in tears. "What are you doing to that poor woman?" his nurses asked him. He was concerned and mentioned it to her. "You stay off

that man's back," she told the nurses. "He's the only one I can tell how I really feel. I need him to cry to, so you let him be."

The patient may find it difficult to talk and should not be pushed. Tactful routine questions about his welfare and the family may open the door. The ordinary process of getting a history and establishing facts not already known to the physician may pull the emotions into the interview. When the patient reveals indirectly how he feels, verbally or nonverbally, the emotion can be reflected back. If the patient is completely blocked, the reason may be an underlying depression. Feelings of anger toward the deceased should be accepted with reassurance when they are normal. Feelings of guilt should be heard and accepted but reassurance is inappropriate in the initial stages. The patient needs to talk and reassurance that there is no need to feel guilty turns him off before he has started. You can be assured that he has already had a great deal of reassurance and it hasn't worked. Later when the feelings have been expressed and the situation looked at, the physician can convey to the patient the idea that he is blaming himself excessively; it is better if the patient arrives at that conclusion himself than have it given to him.

If the patient has real cause for guilt then the problem is more difficult. The physician wants to allow him to ventilate but he does not want him to realize, abruptly and overwhelmingly, what a blackguard he may have been. Outside help may be needed from a clergyman or a psychiatrist.

In treating the hypochondriacal patient, the physician should treat the hypochondriacal complaints very seriously, while reassuring the person that they are not due to whatever disease the imagination has dreamed up. If the complaints are brushed off, then the patient feels brushed off and the true cause of the disturbance is never broached.

The physician can give some practical assistance in regard to business and financial problems and this serves a two-fold purpose. For example, it is helpful to suggest to a widow that she look into survivor benefits at the Social Security Office or that she can get advice about household management from a family agency. Moreover, this has a psychotherapeutic meaning in that this discussion may reveal feelings of loneliness and helplessness.

The more serious problems and especially the severe depressions should be referred to a psychiatrist. However, the primary physician, because of his relationship with the family and knowledge of their personalities, is in a good position to treat many of the complications of grief. A very useful approach is to see the whole family; this contact can open up situations that are inaccessible to individual counselling.

Some patients may have to be seen over several interviews. The physician with no psychiatric training often does not know what he should be doing in this kind of continued therapy. He knows that he should listen and help the person express his sorrow and accept his pain but he doesn't know what he should say or what he should ask the patient after the history has been taken.

The approach is based on the concept of mourning as a process in which emotional ties are loosened and the accompanying emotion released. In loosening ties it is necessary to examine them in the everyday detail of life together, to go over what really happened and to place it in perspective. The person is encouraged to review the relationship and what it meant to him. This allows him to express emotion, resolve feelings of guilt and arrive at an acceptable attitude toward the memory of the deceased.

The task of a physician in helping an individual work through the process of mourning is akin to that of a gardener transplanting a bush. The roots have to be traced to their fine endings and worked loose before the bush can be freed and the plant safely removed to another lodging.

There are two basic principles in management: the bereaved should not be abandoned; resist the impulse to shut off grief.

Long Term Effects of Grief

There is a close relationship between unresolved grief and personality problems that may persist for years.

Somerset Maugham⁶ in his autobiographical essay, *The Summing Up*, describes a grief reaction that lasted for a lifetime. After his mother's death, Maugham at the age of eight, was sent to a boarding school. He says: "When I was a small boy and unhappy I used to dream night after night that my life at school was all a dream and that I should wake to find myself at home again with my mother. Her death was a wound that fifty years have not entirely healed. I have long ceased to have that dream; but I have never quite lost the sense that my living life was a mirage in which I did this and that because that was how it fell out, but which, even while I was playing my part in it, I could look at from a distance and know for the mirage it was. When I look back on my life, with its successes and failures, its endless errors, its deceptions and fulfillments, its joys and miseries, it seems to me strangely lacking in reality. It is shadowy and unsubstantial."

Alvarez⁷ in his study of suicide, *The Savage God*, has described how the early experience of loss, especially under tragic circumstances, leaves a "dark center" at the core of the personality, an area of sorrow and mystification which may emerge years later, perhaps in a suicide.



Testing in Humans: Who, Where & When.

the weight of ethical opinion:

Few would disagree that the effectiveness and safety of any therapeutic agent or device must be determined through clinical research.

But now the *practice* of clinical research is under appraisal by Congress, the press and the general public. Who shall administer it? On whom are the products to be tested? Under what circumstances? And how shall results be evaluated and utilized?

The Pharmaceutical Manufacturers Association represents firms that are significantly engaged in the discovery and development of new medicines, medical devices and diagnostic products. Clinical research is essential to their efforts. Consequently, PMA formulated positions which it submitted on July 11, 1975, to the Subcommittee on Health of the Senate Labor and Public Welfare Committee, as its official policy recommendations. Here are the essentials of PMA's current thinking in this vital area.

1. PMA supports the mandate and mission of the National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research and offers to establish a special committee composed of experts of appropriate disciplines familiar with the industry's research methodology to volunteer its service to the Commission.

2. PMA supports the formation of an independent, expert, broadly based and representative panel to assess the current state of drug innovation and the impact upon it of existing laws, regulations and procedures.

3. When FDA proposes regulations, it should prepare and publish in the *Federal Register* a detailed statement assessing the impact of those regulations on drug and device innovation.

4. PMA proposes that an appropriately qualified medical organization be encouraged to undertake a comprehensive study of the optimum roles and responsibilities of the sponsor and physician when company-sponsored clinical research is performed by independent clinical investigators.

5. PMA recognizes that the physician-investigator has, and should have, the ultimate responsibility for deciding the substance and form of the informed consent to be obtained. However, PMA recommends that the sponsor of the experiment aid the investigator in discharging this important responsibility by providing (1) a document detailing the investigator's responsibilities under FDA regulations with regard to patient consent, and (2) a written description of the relevant facts about the investigational item to be studied, in comprehensible lay language.

6. In the case of children, the sponsor must require that informed consent be obtained from a legally appropriate representative of the participant. Voluntary consent of an older child, who may be capable of understanding, in addition to that of a parent, guardian or other legally responsible person, is advisable. Safety of the drug or device shall have been assessed in adult populations prior to use in children.

7. PMA endorses the general principle that, in the case of the mentally infirm, consent should be sought from both an understanding subject and from a parent or guardian, or in their absence, another legally responsible person.

8. Pharmaceutical manufacturers sponsoring investigations in prisons must take all reasonable care to assure that the facilities and personnel used in the conduct of the investigations are suitable for the protection of participants, and for the avoidance of coercion, with a respect for basic humanitarian principles.

9. Sponsors intending to conduct non-therapeutic clinical trials through the participation of employee volunteers should expand the membership and scope of its existing Medical Research Committee, or establish such an internal Medical Research Committee, with responsibility to approve the consent forms of all volunteers, designs, protocols and the scope of the trial. The Committee should also bear responsibility to ensure full compliance with all procedures intended to protect employee volunteers' rights.

10. Where the sponsor obtains medical information or data on individuals, it shall be accorded the same confidential

status as provided in codes of ethics governing health care professionals.

11. PMA and its member firms accept responsibility to aid and encourage appropriate follow-up of human subjects who have received investigational products that cause latent toxicity in animals or, during their use in clinical investigation, are found to cause unexpected and serious adverse effects.

12. PMA supports the exploration and development by its member companies of more systematic surveillance procedures for newly marketed products.

13. When a pharmaceutical manufacturer concludes, on the basis of early clinical trials of a basic new agent, that a new drug application is likely to be submitted, a proposed development plan accompanied by a summary of existing data, would be submitted to the FDA. Following a review of this submission, the FDA, and its Advisory Committee where appropriate, would meet with the sponsor to discuss the development plan. No *formal* FDA approval should be required at this stage. Rather, the emphasis should be on identification of potential problems and questions for the sponsor's further study and resolution as the program develops.

The PMA believes that health professionals as well as the public at large should be made aware of these 13 points in its Policy on Clinical Research. For these recommendations envisage constructive, cooperative action by industry, research institutions, the health professions and government to encourage creative and workable responses to issues involved in the clinical investigation of new products.



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When the presenting symptom is depression, the factor of loss and unresolved grief is usually appreciated by the physician. However, when the psychological disturbance is a mixed personality disorder and removed in time from the experience of loss the connection is frequently missed or underestimated.

Sometimes the existence of a problem in unresolved grief is recognized intellectually but discussion avoided by both patient and doctor because the subject is too painful.

In a department review of a case recently, we came to the conclusion that several psychiatrists in different hospitals, over a period of years, had failed to help an eighteen-year old girl because everyone involved had avoided discussion of the suicide of her father when she was twelve. This tragedy had hung like a pall in the background during years of unsuccessful therapy for a behavioral problem that started two years after the death. The importance of the incident was clearly recognized but everyone was afraid that the patient and family could not bear to discuss it. There was indeed some reason for concern on this score as the mother had walled herself off from the family and the patient was volatile. However, a more direct confrontation in family therapy has shown us that the family could bear to talk about it and the patient's subsequent improvement has indicated that they had to face it.

Grief and Children

When a parent dies a child is left with a sense of abandonment, frustration and baffled anger. Unfortunately, the sense of bewilderment is often increased by the way the family excludes the child from the process of mourning. Regrettably, the fact of death is still hidden from children by a series of evasions and half-truths that try to conceal a fact that cannot be concealed because the child knows the deceased is no longer present.

The child's concept of death is not a static one but assumes at least three phases. From three to five, death is a separation and only temporary. From five to ten, death is seen as an alien force, a catastrophe due to outside intervention. Adolescents begin to view death not as an external mishap but as a part of life. Explanations about death have to be pitched to the level of the child's understanding and he should be given as much information as he needs. The child should also participate in the funeral ceremonies in some fashion, preferably being allowed to attend the funeral.

Children often feel guilty when a parent, brother or sister dies. They may have been angry with the departed and feel that their anger was, somehow, responsible for the death. They are not able to distinguish between the wish and the deed. In young

children the idea of death and separation is linked with guilt and punishment. The child may feel guilty that in some magical way his anger or wish brought about the death of the parent or sibling.

Another factor affecting the child's adjustment to a death is the reaction of the surviving parent. For example, if a mother and daughter are left, the mother may become too dependent on the girl for support; if a mother and son are left, the boy may be given a responsibility he doesn't want and is not equipped to carry. Finally, if the surviving parent becomes overinvolved in outside activities or else withdraws completely, the child suffers two losses—the death of one parent and the absence of the other.

The Dying Patient

When a patient is told he has a terminal illness, he usually shows no emotion at the news and he may try to deny some part of the painful reality. However, if you stay with him, the emotional response comes through. The physician should be sure that he has plenty of time to talk with the patient and arrange for someone else to be with him when he leaves.

The degree of honesty must be attuned to what the patient wants to know and usually the patient shows the way. However, the physician should keep in mind that the patient is probably going to find out anyway. Several studies have shown that most terminal patients know they are dying. If the patient is not told the truth, the isolation that surrounds the dying is intensified and his relationships with family and staff rendered meaningless by the air of unreality. If the patient raises questions about his illness, people draw away or tell him "everything is going to be fine" when he knows otherwise.

The problem of loneliness is intense for many terminal patients and if the physician can maintain his relationship with them he does a great service. The physician cannot save the patient's life but he can help him preserve his humanity and his hope. There are many different kinds of hope: not simply hope for survival but hope for the welfare of the family left behind, hope for a death with dignity and free from suffering. Acceptance is not capitulation.

The most common complaints about physicians from dying patients are, "He runs out the door" and "He gets angry with me." Another complaint comes from the nursing staff who are frequently caught in the middle between a patient who asks questions and a doctor who vacillates about telling the patient the truth and does not make his wishes clear to the nursing staff. When this happens, the nurses usually avoid the patient.

Kubler-Ross⁸ has described various stages that patients go through in adjusting to impending death.

These are valuable observations but not applicable to all. I am more impressed with the individuality of response to this elemental stress. A.E. Housman joked with his doctor on the day he died and when the doctor responded with a bawdy story, Housman laughed and said, "Tomorrow I'll tell that one on the Golden Floor."

The reader is referred to the works of Kubler-Ross and a most practical article on "The Terminally Ill Patient" by Dr. James Mathis in Primary Care.⁹

The Dying Child

When the dying patient is a child, the situation becomes agonizing and the emotions aroused to a degree that may well be intolerable. Sometimes, however, the courage and dignity of young patients comes through to fortify us. Most children are not told the whole truth about their illness but those who are sometimes handle it better than adults. It may be because they do not think ahead like adults or because children are so used to adjusting to new things that they look on death as another phase in life, a viewpoint that philosophers have to struggle hard to achieve.

"I'm going to die, ain't I?" a fourteen-year-old girl, dying from leukemia, asked a pastoral counsellor. The counsellor, a nun, answered her questions honestly, saying that death was like growing up, passing from one phase to another. "The hardest part is behind you," she told the girl who had received a great deal of medical attention and found this comment reassuring. They talked about an afterlife and the counsellor told the girl that you lived on in the hearts of those left behind. At the moment of death, not long after, the girl looked at her parents and said, "Don't worry, I'll always be with you."

Another youngster, thirteen years old and dying from Hodgkin's Disease, showed an offbeat humor that helped to counteract the threatening breakdown of her parents. "If I lived, I'd like to do things for other people," she told her mother. "What sort of things?" asked the mother, expecting the girl to say she'd like to be a nurse or a doctor. "A prostitute?" the girl queried. She died four months later and preserved her courage to the end.

Disability and Disfigurement

The emotion of grief occurs after other types of loss, including the loss of physical health and bodily integrity. Patients who lose parts of the body or suffer disfiguring injuries, especially facial injuries, experience grief reactions that commonly present as depressions in the first year or two and more subtle personality dysfunctions in the succeeding years. Many patients use denial as a defense, maintaining that their injury is less serious than it is or else ignoring it completely. The temporary or limited use of denial

may be a help but the permanent or predominant resort to denial is psychically limiting and imposes constrictions on the personality that affect the individual in many ways.

An adequate discussion of the problem is beyond the scope of this article, involving as it does, so many aspects of treatment and rehabilitation of different illnesses. However a point that the primary physician should keep in mind is that for many patients with chronic disability or disfigurement the anxieties are focused on sexual performance. The disability may produce real limitations in sexual functioning, to which the patient and partner have to adjust, but in other instances the sexual difficulties are psychological and not based on any physical limitations. In the second case, the primary physician, rather than the specialist, may be the best person to identify the problem and reassure the patient.

The Fundamental Questions

Some of the physician's difficulty with the reality of death stems from the sense of failure that overwhelms him when a patient dies. No matter how competent his treatment, he fears the accusation, "You failed me, doctor." Sometimes, in truth, the grief of the family is projected in angry accusations against the physician. Although, more often than not, this represents an attempt to deal with their own feelings rather than a legitimate complaint, it is never pleasant.

On a more basic level, death confronts us with the question of our own mortality and the primary physician has to face that question more often than other men.

Physicians are not alone in their difficulty with the idea of death. Philosophers of all schools have struggled with the concept and the gallimaufry of theory ranges from the Epicurean to the Stoic, with Existentialist and Humanist approaches in between. Epicurus wrote: "When I am death is not; when death is I am not. Therefore we can never have anything to do with death." This avoids the subject rather neatly. At the opposite end of the spectrum, La Rochefoucauld said: "Everything has been written which could by any possibility persuade us that death is not an evil. . . Nevertheless, I doubt whether any man of good sense ever believed it."

Some will find more acceptable the statement of Heidegger: "Dying does not mean that existence is at an end; rather death is a mode of being upon which existence enters as soon as it has begun." For many, the doctrines of established religion are the resource to which they turn in adversity.

In counselling the bereaved person, the doctor does not assume the role of philosopher or clergyman; he tries to help the person deal with feelings and the

problems of everyday life. The doctor needs to have a philosophical acceptance of his own mortality, however, and have come to terms with his own personal griefs if he is to be comfortable in relating to his patients. If he comes to look beyond the clinical experience to search whether there is more to the tragedy than just the tragedy, then he may become a philosopher as well as a clinician.

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CONNECTICUT MEDICINE, FEBRUARY, 1976

Increasing the Number of Primary Care Physicians: Progress Report

In June 1973, the House of Delegates adopted Report Z of the Board of Trustees, prepared jointly by the Council on Medical Education and Council on Health Manpower, on "The Distribution of Physicians by Medical Specialty." This report reviewed the problems inherent in attempting to determine the exact numbers and types of medical specialists needed, but supported a consensus that there was currently an insufficient number of physicians delivering primary care, and that to prevent an even further decrease in the future, the number of medical graduates entering residency training in the primary care specialties should be increased. The report opposed the concept of controlling access to specialty education whether through accreditation or other means. It recommended instead that the AMA adopt immediately, publicize widely and promote vigorously a goal to have at least 50 percent of all graduates of U.S. medical schools enter residency training in the primary care specialties in the coming years.

The purpose of the present report, also prepared jointly by the Council on Health Manpower and the Council on Medical Education, is to inform the House of Delegates of the activities undertaken and progress made toward meeting this goal.

The American Medical Association's commitment to increasing the number of physicians providing primary care actually predates the adoption of Report Z by a number of years. In 1964, with the concurrence of the Board of Trustees, the Council on Medical Education established an ad hoc Committee on Education for Family Practice with the following charge:

1. To review present AMA policy regarding the future of family and/or general practice and determine whether the goals of such policies are being achieved.
2. To recommend the educational approach by which present goals may be achieved if they are not being achieved now.
3. To define and recommend policies by which these goals may be achieved.

In its final report, adopted by the House of Delegates in November, 1966, the Committee recommended major effort to expand and increase programs for preparing family physicians at all levels of medical education, including premedical, medical school education, internship and residency training, and

continuing medical education. Also recommended were the development of family practice models, increased financial support for family practice teaching programs, recognition and status for family practice teaching programs, recognition and status for family practice commensurate with other medical specialties, including the provision of an appropriate specialty certification system, enhancing other incentives to entering this specialty field, and study of the effects of medical school admission procedures, curricula and student evaluation policies on production of family physicians.

Progress to date in implementing the recommendations of this ad hoc Committee has been impressive. At the time the Committee's report was adopted, there were in existence only a few pilot residency programs in family practice; as of January, 1975, there were 233 approved programs. The total number of family practice residents reached 2,671 in the 1974-1975 academic year, with 1,313 approved first year positions and a 93% rate of fill. With the encouragement of organized medicine, financial support for programs in family medicine from the federal government and other sources has increased substantially, including funds for construction or renovation of ambulatory teaching facilities, special project grants to improve education in primary care, funds for student assistance, and other financial incentives to expand the training of family physicians. As of October, 1973, forty-nine medical schools had in operation an undergraduate program in family medicine; two thirds of these programs had been established within the preceding three years. One year later—October-1974—the number of schools with such programs had increased to 85.

With the establishment of intellectually challenging residency programs, the formulation of the American Board of Family Practice in 1969, and the establishment of certification and required periodic certification of diplomates in this field, family practice has achieved full recognition as a specialty in its own rights, and family medicine has become an increasingly attractive career for many physicians.

In recommending that 50 percent of medical graduates enter residency training in family practice and the other primary care specialties, Report Z (A-73) indicated the intent of the Council on Medical Education and Council on Health Manpower to meet with the appropriate specialty societies, specialty boards and other groups most directly concerned to



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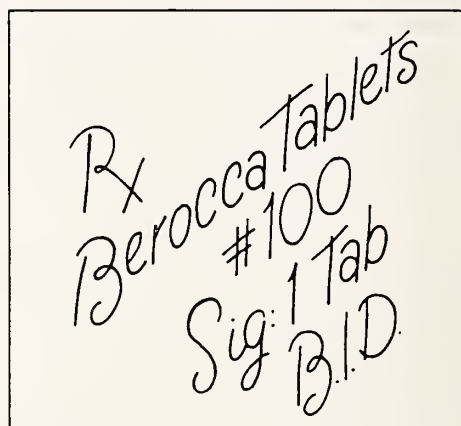
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develop specific plans and recommendations for achieving this needed increase. In January, 1975, the two Councils cosponsored a Workshop for this purpose involving the specialty societies, boards and professorial associations for the specialties concerned, medical student organizations, Association for Hospital Medical Education, Association of American Medical Colleges, two foundations, and the U.S. Department of Health, Education, and Welfare—in all, some 21 different groups. In two days of concurrent discussion groups participants identified specific steps needed to (a) increase student interest in primary care, (b) improve the practice climate, (c) improve the academic climate, and (d) provide the increased faculty, facility and funding resources needed.

The following recommendations were among those made at the workshop:

1. *Increasing student interest*

- a. Increased integration of primary care physicians into medical center teaching activities with full faculty status;
- b. More undergraduate preceptorship experiences in primary care emphasizing continuity of contact with responsibility for specific groups of patients;
- c. A requirement that residency programs in the four primary care specialties provide similar continuity of responsibility for given patients and ambulatory care experience for all residents;
- d. Provision of more realistic and complete information to medical students on the rewards and career opportunities in primary care practice;
- e. Development of more valid data on student characteristics predisposing to choice of primary care practice.

2. *Improving the practice climate in primary care*

- a. More information and assistance to physicians in establishing group practice and in effective use of allied health personnel;
- b. Study of the feasibility of restructuring reimbursement systems for primary vs. secondary and tertiary care and of allocation of income on bases other than mechanical procedures;
- c. More opportunities for continuing medical education for the primary care physician;
- d. Increased education of the public concerning the value of and intelligent use of primary care services;
- e. Hospital privileges for physicians providing primary care, based on training, experience and demonstrated ability rather than solely on specialty certification.

3. *Improving the academic climate*

- a. Development of more departments of family practice with equal status and prerogatives comparable to other major departments within the medical center;
- b. Increased emphasis on primary care experience in departments of internal medicine, pediatrics, and obstetrics and gynecology;
- c. Development of statements of support for education and practice in primary care for transmittal to all medical schools by the appropriate specialty societies, boards, and associations of professors (two such statements already developed in the field of internal medicine and obstetrics and gynecology are appended to this report);
- d. Recruitment and retention of competent and creative faculty, and reorientation of faculty and house staff involved in primary care training from disease-centered to a patient-centered focus of care;
- e. More training in behavioral aspects of patient care, in communications skills, and in cooperation with allied health professionals;
- f. Encouragement of the appropriate medical specialty boards to require significant exposure to primary care as a condition of eligibility for specialty certification;
- g. Development within every medical school of an ongoing ambulatory care unit providing 24-hour care to a representative cross-section of patients, with full-time faculty and long-term assignment of students.

4. *Meeting resource needs*

- a. Establishment in every medical school of some administrative unit devoted to the promotion and advancement of primary medical care;
- b. A study by the AMA of ten or so academically representative medical centers to better identify the additional resources needed to expand training in primary care;
- c. Provision of support from patient-care funds for primary care training at undergraduate and graduate levels;
- d. Involvement of more volunteer practicing physicians in teaching primary care, as well as encouragement of experience in primary care delivery for full-time faculty;
- e. The inclusion in legislative funding authorities of requirement for programs providing continuity of patient care.

These and many other important recommendations made by the Workshop participants are being given careful study by the Council on Medical Education; many of them will be forwarded to other groups both

Table 1
PHYSICIANS IN PRIMARY CARE SPECIALTIES
1972 and 1973

SPECIALTY FIELD	TOTAL PHYSICIANS											
	TOTAL PHYSICIANS				EXCLUDING INTERNS & RESIDENTS				RESIDENTS AND INTERNS			
	1972		1973		1972		1973		1972		1973	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Family/ General Practice	55,348	15.5	53,946	14.7	54,322	17.9	52,141	17.2	1,026	1.9	1,805	3.1
Internal Medicine	47,994	13.5	49,899	13.6	35,185	11.6	35,736	11.8	12,809	23.9	14,163	24.3
Pediatrics	19,610	5.5	19,931	5.4	15,475	5.1	15,508	5.1	4,134	7.7	4,423	7.6
Obstetrics & Gynecology	20,202	5.8	20,494	5.6	17,146	5.7	17,183	5.7	3,056	5.7	3,311	5.7
Total in Primary Care	143,154	40.3	144,270	39.4	122,129	40.3	121,198	40.0	21,025	39.3	23,702	40.7
Total in U.S.	356,534	100.0	366,379	100.0	302,983	100.0	308,127	100.0	53,551	100.0	58,252	100.0

within and outside the AMA for similar study and implementation as appropriate.

At the time Report Z was adopted by the House of Delegates, the latest information available indicated that as of year-end 1972 about 41 percent of American medical school graduates entered residencies in one of the four primary care specialties. One year later—year-end 1973 (the latest date for which full information is currently available)—this figure had reached the recommended 50 percent of all American graduates entering primary care residencies. (If residencies filled in these specialties by Canadian graduates are also included, the percentage is even higher—55 percent.) As shown in Table 1, the percentage of all interns and residents in the primary care specialties, as well as those in the first year of training, has also increased, from 39.3 percent in 1972 to 40.7 percent in 1973.

While this percentage growth is impressive, its impact on availability of primary care services will of course not be felt until the individuals involved complete their graduate education. In addition, an undetermined percentage of these first year residents will enter referral specialties or subspecialties within internal medicine, pediatrics or obstetrics and gynecology before completion of their training. For these reasons, the Council on Health Manpower and Council on Medical Education believe that continued emphasis over the next few years should be directed to encouraging more young physicians to enter residencies in the primary care specialties, particularly the specialty of family practice. The Councils and the Board of Trustees recommend that AMA and other concerned organizations continue strong efforts toward this end.

The Board of Trustees, Council on Medical Education and other components of the AMA will continue to monitor closely the growth in the number of physicians entering and providing primary care.

Position Statement for Workshop on Primary Care

Studies show that more than 80% of women who have the opportunity to choose, utilize their obstetrician-gynecologist for periodic health evaluation and care.

Obstetrical care often provides the first contact into continuing health services, and over 65% of obstetrical deliveries in the United States are performed by obstetrician-gynecologists.

The obstetrician and gynecologist assumes the responsibility for patient management, including periodic comprehensive evaluation of health status with referral to and integration of other health services.

There is an increasing demand for the primary care services for the obstetrician-gynecologist, often provided in an ambulatory setting. Women increasingly seek regular periodic examination, marital and sexual counselling, and medical and surgical regulation of reproduction.

For these reasons, the discipline of obstetrics and gynecology must be recognized by professional and public planning groups as a primary care specialty in every sense of the word, and be included as such in all health manpower developments.

Frederick J. Hofmeister, M.D. (ACOG); Abe Mickal, M.D. (APGO); J. George Moore, M.D. (ABOG); Ervin E. Nichols, M.D. (ACOG); Ben M. Peckham, M.D. (CREOG); Keith P. Russell, M.D. (ACOG); E. Stewart Taylor, M.D. (APGO); J. Robert Willson, M.D. (ABOG).

Training and Certifying the Primary Care Internist

Statement adopted by the American Board of Internal Medicine, Inc. at its meeting of September 11, 1974

Recognizing the role of the ABIM in the setting of standards of training to qualify for the Certifying Examination in Internal Medicine and in the accreditation of residencies in internal medicine, the Board resolves that:

1. The ABIM will continue to certify excellent primary care internists. The internist is well prepared to offer patients access to continuing and comprehensive medical care of the highest quality.
2. Residencies in internal medicine must include specific training for the provision of primary care internal medicine without compromising proven excellence. This training is to be accomplished in no less than three years.
3. The ABIM believes that the teaching and practice of general internal medicine are the core and the principal function of Departments of Internal Medicine, employing practicing role models of excellence for students and house officers. Attractive facilities for ambulatory care and an environment that emphasizes the need for and the development of internists for primary care should be available.
4. Recognizing the public need for excellent primary care by internists, the ABIM advocates the prompt establishment and funding of a substantial number of new residency positions of high quality in general internal medicine. In implementing this recommendation, it is imperative to correct the present deficiency in funding of education and training in the ambulatory patient setting.
5. The Residency Review Committee should continue to require training in general internal medicine for accreditation of a residency program. Experience with ambulatory patients and with disciplines such as dermatology, office gynecology, musculoskeletal medicine, ophthalmology, otolaryngology, and psychiatry should be assured.
6. The ABIM will appoint a task force to determine the knowledge, skills, and attitudes to be evaluated, to review existing examination techniques relevant to primary care, and to consider content and new techniques for the Certifying Examination in Internal Medicine.
7. In order to provide continued validation of the Board's current and future assessment procedures, the ABIM will participate with other organizations examining the quality and type of care which internists deliver.

In Memoriam

Coppola, Edward A., Long Island College of Medicine, 1910. Before his retirement in 1950 Dr. Coppola was a general practitioner in the New London area since 1940. In 1913 he was with the United States Government Indian Service in Arizona and New Mexico. He also had served as chief of medicine in Beth Israel Hospital in Passaic, N.J. and was a volunteer member of the Medical Service Corps during World War I. He was a member of the New London County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Coppola died December 2, 1975, at the age of 93.

Edwards, Herbert R., College Medical Evangelists, 1918. Dr. Edwards was a general practitioner in the New Haven area since 1928. He was a member of the New Haven County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Edwards died December 6, 1975, at the age of 85.

Impellitteri, Thomas J., Marquette Medical School, 1949. Dr. Impellitteri was a general practitioner in the Fairfield area since 1950. He was a U.S. Army veteran of World War II, and interned at Bridgeport Hospital. He was a member of the Fairfield County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Impellitteri died December 21, 1975, at the age of 56.

Moore, Samuel W., Harvard Medical School, 1930. Dr. Moore was a practicing surgeon in the Litchfield area since 1963 until his retirement in 1973. He was a member of the Litchfield County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Moore died December 1, 1975, at the age of 69.

SPECIAL NOTICES

YALE UNIVERSITY SCHOOL OF MEDICINE

will present a symposium

April 23, 1976

on

Care of the Non-Life Threatening Burn

KEYNOTE SPEAKER: Alan R. Dimick, M.D.
Associate Professor of Surgery, University of Alabama

The one-day symposium is designed to highlight some of the problems encountered in managing the minor and moderate sized burn, those most commonly cared for in the general hospital. Included will be discussions of the outpatient management of burns, debridement, infection control and wound closure. The role of the physician's assistant and burn nurse in the team approach will also be discussed. The program is open to all health practitioners and has Category I accreditation toward the AMA's Physicians' Recognition Award.

Personal Finance for the Self-employed Professional: Building a Portfolio

Harold A. Wolf, Ph.D.

The self-employed professional should start to build his portfolio as soon as possible after setting up practice. Assuming that he (or she) is practically flat broke but not too deeply in debt when he sets up practice, he may not be able to buy much more than some life insurance at first. Life insurance should be a first priority. As suggested in the first article of this series, the first insurance policies purchased should probably be term or modified three-year or modified five-year plans. These modified plans are special policies that automatically convert from term to permanent insurance after three or five years have elapsed. Next, the young professional should open a savings deposit in a bank or savings and loan association for emergency purposes and for building up a fund with which to purchase a house, also a high priority item. It is important for the person to make regular monthly or weekly deposits into the savings account. The key word is regular; make this a habit because it may not get done otherwise.

Home Ownership

The early acquisition of a home is important because it is one of the best investments an individual can make. Homes have proven to be good inflationary hedges and also provide tax advantages. It is important not to wait until the necessary down payment is acquired for your dream home; this will take too long. It is preferable to buy a cheaper home as soon as possible and then later "trade up." In this way the buyer obtains the tax advantage and inflationary hedge earlier. For those who do not enjoy yard work or upkeep, a condominium should be considered; it will provide the same tax benefits and inflationary hedge.

The savings account being built up for emergency purposes should be used to meet the required down payment on a home as soon as it is large enough. This will deplete the account, so the regular payments into it should continue. These regular payments can be reduced somewhat now, if this is necessary, because the person can borrow in the event of an emergency, and one of the goals of the savings account—home ownership—has been accomplished. In addition, saving out of current income is likely to decline for a while now while household furniture and other durable consumer goods are acquired to fill the home.

The Keogh Plan

A Keogh plan should also be set up as soon as possible because it allows legal reductions on federal income

tax payments for self-employed individuals. If a choice must be made between a home and a Keogh plan during the early years of practice, this becomes a matter of personal taste.

Keogh plans can be set up only by the self-employed and they are a means of providing the same tax benefits enjoyed by salaried employees under corporate pension plans. The law was recently amended to permit up to 15% of earned income per year—but not to exceed \$7,500—to be placed into a special fund and then deducted from income on the federal tax forms. Neither the income earned by the fund nor the capital gain accruing to it are taxed while the fund is being built up. In order to enjoy the tax benefits the funds cannot be withdrawn until the person is 59½ years old (in the event the person becomes totally disabled he may withdraw his funds earlier). If the funds are withdrawn before age 59½, there is a stiff penalty tax and another Keogh plan cannot be set up for five years. Consequently, the money in a Keogh plan cannot be looked upon as an emergency fund.

Not only must the individual Keogh plan qualify as noted, but each plan must also be approved by the Internal Revenue Service. Because of this most people have an institution manage it for them. There are several different institutions which have developed Keogh plans which have been approved by IRS. Most people who have a Keogh plan have made an arrangement with either the trust department of a commercial bank, a life insurance company, or a savings and loan association.

College Trust Fund for Children

The day each child is born the parents should open a passbook savings account in the child's name in a savings and loan association, and then make regular payments into it. If \$20 per week are deposited into such an account, then in five years the principal plus interest will amount to about \$5,800; moreover, these funds could be put into higher yielding certificates of deposit periodically as multiples of \$1,000 occur.

When each child's savings account grows to several thousand dollars, the parents should consider transferring it into an irrevocable trust in the trust department of a commercial bank. The bank will probably be able to obtain a higher yield than the savings and loan association, and also there is a tax benefit in making this transfer. The interest earned while the funds were in the financial institution were taxable as income to the physician, whereas if the funds are in an irrevocable trust

Dr. Wolf, Professor of Finance, Department of Finance, BEB 125, The University of Texas at Austin, Austin, Texas 78712.

they are income to the child and hence not subject to tax unless his total income is in excess of \$2,050.

An irrevocable trust is one in which the individual making the grant cuts the string so he can never take the funds back. The bank manages the trust on behalf of the child, and although the grantor can stipulate how the funds will be invested, the grantor can never again get the funds. The trust agreement can even stipulate that the fund's first priority use will be for college expenses and cannot be used for any other purpose until the child reaches a certain age.

Other Possible Investments

Once our physician has made his high priority investments such as in life insurance, savings deposits, home ownership, a Keogh plan, and a college trust fund for the children, he can seek other investment opportunities. We will discuss some of them; namely treasury bills, stocks and bonds, mutual funds, tax-exempt municipal bonds, real estate ventures, and revocable trusts. We will also examine the professional corporation as a means of achieving certain goals. An individual will select from among these in accordance with his personal tastes, preferences, and opportunities which may vary to some extent from person to person. Moreover one person will prefer certain alternatives, another person, others. Some individual may choose only one or two investment outlets; others will want more. The extent of diversification also becomes a personal matter.

Treasury Bills

The person who wants a high degree of liquidity and often a higher rate of return than provided by a savings and loan passbook account should consider United States Treasury Bills. These are short-term United States Government obligations and often during periods of tight money they yield more than passbook savings. Sometimes, however, they yield less. Funds can be shuttled between savings and loan passbook deposits and Treasury bills in accordance with yield. Treasury bills come in denominations of \$10,000, are sold below face value, and when they mature are redeemed at face value; the difference is the interest income. They can be purchased from commercial banks who obtain them directly from the US Treasury in the weekly auction market. In this way the buyer can avoid paying dealers' commission fees, although recently banks have been charging a modest fee for this service—generally \$15 to \$20 per transaction. Treasury bills come in maturities of 90 and 180 days, and when they mature they generate cash that can be reinvested in new issues. The bank provides the entire service; they buy the bills, charge the checking account, hold the bills for safekeeping, collect the funds, and credit

the checking account when they mature, and then reinvest in new bills if desired.

Corporate Stocks and Bonds

In the past few years the stock market has lost some of its former glamour and many investors have left it. The stock market has declined and consequently there are now some very good buys as judged by earlier standards. However, until greater confidence is restored, the market will remain depressed. Some of the stocks in the Dow Jones industrial average have declined to the point where they have a relatively high dividend yield. The Dow Jones as a whole now has a relatively low price earnings ratio. While common stock seem to have lost their ability to provide an inflationary hedge, they are beginning to look like good investments.

Stock were historically classified into income stock and growth stock. Income stock are those of companies whose record of earnings is good and who generally pay out a large proportion of their profits in the form of dividends. Growth stock are those of companies that have a proven record of good growth in sales and profits, but that retain most of their profits for expansion purposes. Growth stock were the prime candidates for price appreciation, and appealed to younger investors. Income stock, on the other hand, appealed to older investors. This is still sound advice, unless the investor has lost all confidence in the American economy.

Considering present interest rates, some long-term corporation bonds might be acquired for the professional's portfolio. Bond prices fluctuate in the market inversely with fluctuations in the rate of interest, hence there can be capital gains or capital losses if bonds are sold before maturity. Because of this the professional person should buy bonds only if the yield is satisfactory, and with the intent of holding them to maturity.

Mutual Funds

Mutual funds are an alternative to buying stock and bonds directly. Indeed some believe that in the future individuals will hold most of their securities indirectly through an institution. When a person buys mutual funds he is getting professional management, diversification, and constant surveillance. The buyer pays for this service through loading and management fees, but the extra cost may well be worthwhile. Moreover, there are some good no load funds that can be obtained, and their purchase greatly reduces the cost of acquiring mutual funds.

Tax Exempt Municipal Bonds

These bonds should have strong appeal to the busy man who has substantial earnings, and therefore a tax

problem. Congress has for a long time made the interest received on the bonds issued by state and local governments and their political subdivisions tax exempt. These are long-term investments which can be purchased from a bond dealer and if this is done, the investor would get the actual bonds. Generally, five bonds are the minimum a dealer will sell and a \$5,000 investment is required. However, recently closed end investment trusts have been established through which municipal bonds can be purchased indirectly and in multiples as low as \$1,000. The sales charge on them is usually about 3.5%. The interest is generally paid semi-annually, although some trusts will pay it monthly. There is also a secondary market in these trusts certificates so they need not be held until the bonds mature, which may be 20 years or more. Fig. 1 shows the after tax yield for varying rates of interest and tax brackets; some are excellent.

Real Estate Investments

Real estate investment can be lucrative: it provides both a tax benefit and generally is an excellent inflationary hedge. In buying any residential rental property two questions must be answered. First, will the property in question maintain its value, decline in value, or increase, assuming proper maintenance? Second, what will be the return on the investment? The answer to the first question will be determined to a large extent by the desirability of the property's location as well as the community's future pattern of growth and development.

Before a residential rental unit is purchased, the prospective buyer should determine whether or not the community is overbuilt. The apartment vacancy rate should be examined together with the number of houses for rent. An analysis of these two factors can also shed light on which of the two residential alternatives is likely to be the better investment. Apartment dwellers and renters of single family homes or even duplexes are generally different types of people. How-

ever, if substantial sums are to be committed, the apartment route will almost certainly have to be taken, because it is much more difficult and time consuming to manage ten single-family residences than one 10- or even 20-unit apartment house. The return on a residential rental unit can be shown with a hypothetical illustration (Fig. 2).

Now, however, the buildup in equity must be added in, and this would be about \$250 per year, which gives a return on the investment of $\$357 \div \$2,000$ or 17.8%. There is also a depreciation calculation to be made. On a \$20,000 piece of real estate it is logical to assume the house itself is worth about \$16,000. Depreciating this value over 20 years at the maximum rate allowed provides \$1,000 in depreciation charges if it is an old house and \$1,200 if it is a new house for the first year. Of the two depreciation figures, the pertinent one can be offset against earned income tax wise. The example of a rental house (Fig. 2) is a fairly good investment and a tax shelter as well.

In reality, about a 7% management fee is justifiable because it is bothersome and time consuming to own a rental house. This fee is applied to the total rental income and in the cited case it is \$173.25. This makes the investment less attractive from an investment point of view, but it is still a good tax shelter and inflationary hedge.

This is precisely why some people prefer to own apartments. A 10- or 20-unit apartment is often easier to manage than even two or three single-family units. Also, if the owner's properties are large enough, he can hire management services and have both a good investment and a tax shelter.

Another good real estate investment opportunity is a commercial or office building. The previous analysis applies in such a case as well. A larger investment would be required than in the case of a single-family unit, and someone could be hired to take care of the management problem.

A third investment alternative in real estate is raw land. There are no tenants to complain and no manage-

1. After tax yield for varying rates of interest and tax brackets.

Tax Exempt Yields	Tax Bracket															
	28	32	36	39	42	45	48	50	53	55	58	60	62	64	68	70
Tax Equivalent Yields																
5.0%	6.94	7.35	7.81	8.20	8.62	9.09	9.62	10.00	10.64	11.11	11.90	12.50	13.16	13.89	15.63	16.67
5.5	7.64	8.09	8.59	9.02	9.48	10.00	10.58	11.00	11.70	12.22	13.10	13.75	14.47	15.28	17.19	18.33
6.0	8.33	8.82	9.38	9.84	10.34	10.91	11.54	12.00	12.77	13.33	14.29	15.00	15.79	16.67	18.75	20.00
6.5	9.03	9.56	10.16	10.66	11.21	11.82	12.50	13.00	13.83	14.44	15.48	16.25	17.11	18.06	20.31	21.67
7.0	9.72	10.29	10.94	11.48	12.07	12.73	13.46	14.00	14.89	15.56	16.67	17.50	18.42	19.44	21.88	23.33
7.5	10.42	11.03	11.72	12.30	12.93	13.64	14.42	15.00	15.96	16.67	17.86	18.75	19.74	20.83	23.44	25.00

2. Hypothetical illustration showing return on residential rental unit.

Cost of house		\$20,000
Down payment	\$ 2,000	
Mortgage at 8%	\$18,000	
Rental income \$225 x 11 (Assumed house is vacant one month per year.)		2,475
Expenses		
Taxes	400	
Insurance	100	
Maintenance & repair	200	
Total before interest and depreciation	700	700
Mortgage payment at 8% \$139 x 12		1,668
Cash flow		107
\$107 ÷ \$2,000 = 5.4% return		

ment problems to worry about. Rather, only taxes need be paid, and after a time one hopes the land will appreciate in value and there will be a capital gain to enjoy. Picking the right land is, of course, the problem. The ideal is to pick land not in a growth area, but in one which is destined to become a growth area. Patience is necessary, but judicious purchases of raw land can provide real benefits. Will Rogers was correct in his comment on land when he said, "They ain't making any of that anymore."

Trusts

The revocable trust is another investment alternative which might fit the needs of some self-employed professionals. A revocable trust, unlike the irrevocable trust, is one over which complete control is retained. The trust can be terminated and the funds in it taken back at any time. While it is in effect, it is merely a device through which investment authority is delegated to another party. Generally the trust department of a large commercial bank will provide the trustee services. The trustee is able to invest in corporate securities, real estate ventures, short-term treasury bills, mortgages, and commercial paper. Consequently, it provides flexibility as well as professional management. In addition, it will probably earn a higher rate of return than the individual investor will be able to achieve.

A trust is also a device which can be used to reduce the federal estate tax. Such a trust is a "testamentary trust" which is set up in accordance with the provisions of a will upon the death of the creator. Such a trust, however, is too complex to discuss in this short article.

The Professional Corporation as a Vehicle for Investments

The professional corporation provides many of the same benefits as the Keogh plan, except that it is even

more flexible and there is no limit like the 15% which applies to Keogh plans. The professional corporation can be used to defer taxes, but only by physicians, attorneys, dentists, CPAs, architects, engineers, and others who are required to obtain a license before performing their services. In that sense, it is narrower than the Keogh plan; not all self-employed are eligible.

The professional corporation is the outgrowth of a series of court cases, the results of which finally resulted in the IRS ruling in August 1967 that "organizations of doctors, lawyers, and other professional people organized under state professional association acts will, generally, be treated as corporations for tax purposes." Generally speaking the professional corporation provides tax benefits by making certain benefits tax deductible which otherwise would not be deductible. These deductible items include:

1. A qualified retirement plan. This was available to these people before through the Keogh plan, but has a 15% limitation which doesn't exist under the professional corporation.
2. Medical expense insurance. No limit as is the case for an individual.
3. Disability income insurance.
4. Deferred income plan. The corporation can withhold funds, invest them in securities, or buy more life insurance with them and later pay them to the employee when he retires. This is actually similar to the first point except that retirement plans must apply to all employees of the corporation, whereas deferred income plans may be selective.

But heed one word of warning: Putting together a professional corporation is a job for an expert. If you feel you qualify for incorporation you should obtain professional tax guidance.

Summary

A number of investment alternatives for the self-employed have been examined but not all of them will be appropriate for our hypothetical physician. However, the first five investments probably should be looked into by everyone; the latter seven are alternatives, and choosing among them is a matter of personal preference. But keep in mind that the larger the number of investment alternatives selected, the greater the amount of time required to manage them. In some cases the management can be delegated to others such as, for example, in the case of mutual funds and trusts. In others, the self-employed person will have to devote some time to managing his financial affairs.

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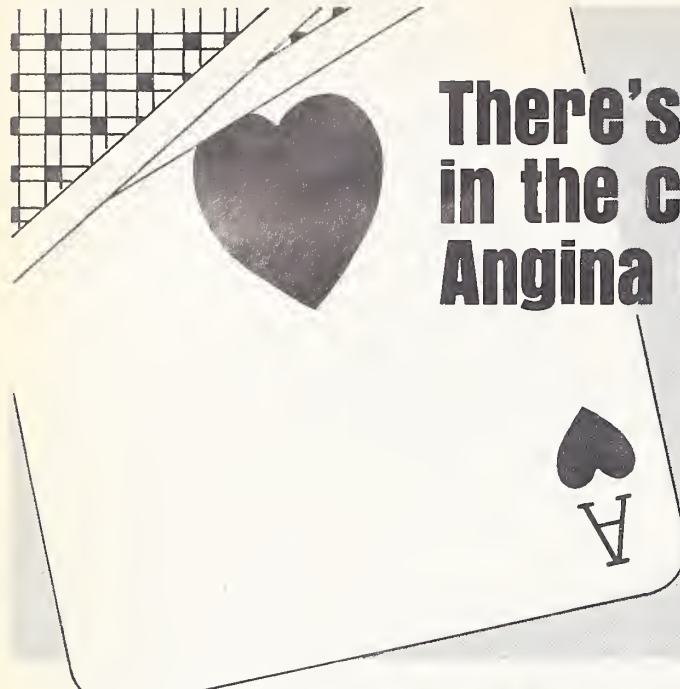
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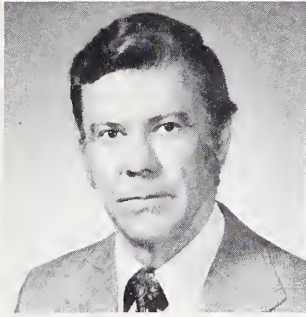
and weakness, in addition to other signs of cerebral ischemia associated with postural hypotension may occasionally be seen. ISO-BID can act as a physiological antagonist to norepinephrine, histamine, acetylcholine and many other medications. An occasional patient may show marked sensitivity to the hypotensive effects of nitrite; severe responses (nausea, vomiting, weakness, restlessness, pallor, excessive sweating and collapse) can occur, even with the usual therapeutic dosage; alcohol may enhance this effect. A drug rash and/or exfoliative dermatitis is occasionally seen.



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The President's Page



Medical ethics has suddenly moved to center stage. Recent scientific advances which have enabled physicians to prolong life and regulate birth and conception have raised important moral and ethical questions and the public is demanding answers.

Probably the simplest definition of medical ethics is the science of how medicine ought to be practiced. There is a general consensus that medical ethics do not and should not exist apart from what might be considered the common ethics of everyday morality. The medical label is being stressed because the subject is so comprehensive and its issues so sensitive, emotionally charged and critical to life, that they require meticulous attention to detail, clear distinctions and critical surveillance.

Current biomedical advances such as dialysis and organ transplantation with their twin dilemmas of candidate choice and cost versus benefit have caused confusion, disagreement, and even violent arguments within the profession. So many of our old and familiar, ethical guideposts seem to be either falling down or pointing in both directions. Decisions have never been so critical or painful: how does one wisely balance needs against limited resources? how does one decide what limits should be placed on genetic engineering? how does one decide whether to slow down, speed up, or merely observe the human dying process? Lastly, can we continue to carry out vital research experiments using our people as subjects without either dehumanizing them or depriving them of their legal rights?

Along with our other disillusionments is the growing realization that some of our lab-coated colleagues are capable of some disturbing proposals and morally dubious experiments. At a recent World Food Conference in Rome distinguished scientists suggested that famine should take its natural course among the people of India and Africa. Others argued that disease has a natural place in human history and the side effects of its conquest could well be worse than the disease itself. At Tuskegee, under our government's auspices, two hundred male syphilitics, chosen at random, were treated with placebos instead of curative penicillin. At Willowbrook, institutionalized, retarded children were administered a potentially fatal hepatitis virus. Two researchers sponsored by our own prestigious Institute of Health injected live cancer cells into uninformed subjects. Who would now argue that we do not need clearly defined guidelines as to what constitutes ethical research?

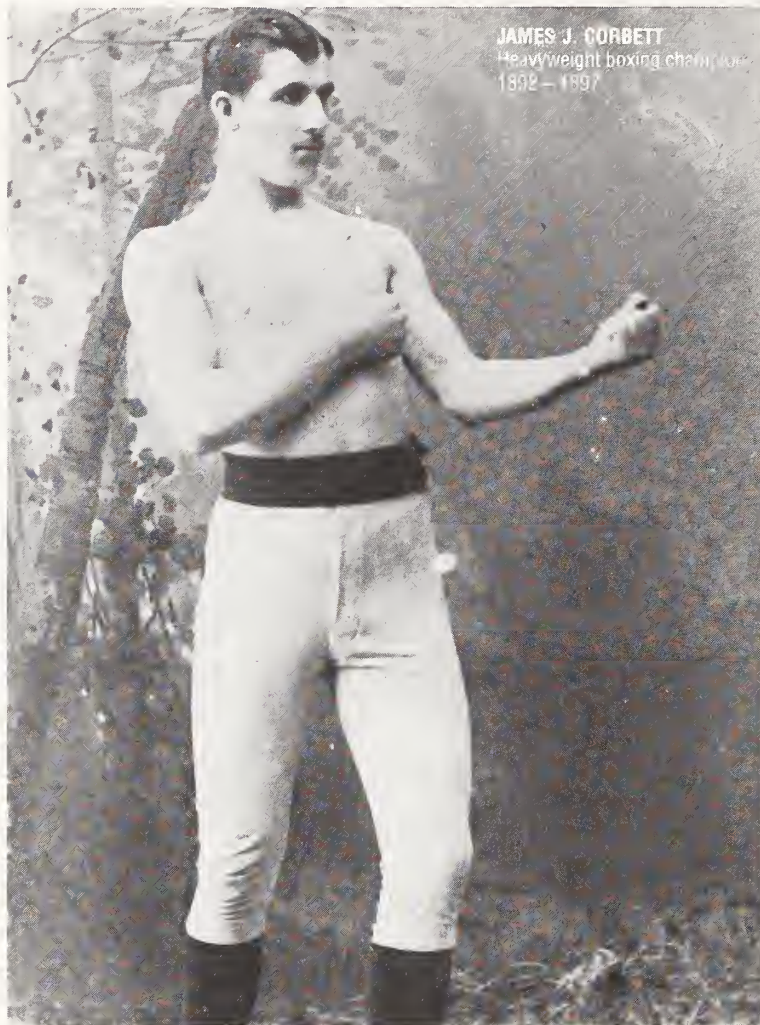
Biomedical science is indeed in crisis but the crisis goes much deeper than questions of funding, government control, or even socialized medicine. The question is whether the nation will end up with what can be considered civilized medicine. How we regulate human experimentation will largely determine the outcome of this issue.

Study and analysis of the current ethical problems in medicine are essential. Unless we as physicians understand the meaning of our past and agree to the goals and direction of our future, we may well be condemned to aimless and valueless progress. The end result of such a course cannot be predicted and may not even be desired. If we do decide to formulate moral and humanistic regulations, medical ethics like all ethical systems must satisfy certain basic criteria. Since the code must be binding on all, it must be understandable and justifiable to all. It must have universal appeal and provide a set of rules which all rational people can approve, support and encourage everyone to follow.

A modern ethical code is vital to the profession and to all the biomedical sciences in order to preserve our sanity, to protect the integrity of our humanistic heritage and to provide a moral legacy for those that follow. There is no other option.

Guy W. Van Syckle, M.D.
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Reflections from the Dean's Office

Robert U. Massey, M.D.

Medicine has its canonical books and I suspect we could get agreement on what they are from almost any committee of middle-aged physicians. Hippocrates, Galen, and Vesalius would be included among the books of the old dispensation. The new is very new as canons go and would certainly include Bulletin Number Four (1910), *A Report to the Carnegie Foundation for the Advancement of Teaching*. The Flexner Report, like the Bible, is alluded to frequently, rarely quoted, and almost never read. It seems to most physicians to mark the Edwardian time when medicine and medical education turned the corner.

Historical events are important or unimportant depending on what we think about history itself, how well they are recorded or recalled, and to which of our presents they are prologue. If we lack a coherent view of some particular history, then past events in that story are not important, except to writers of history texts, guide books, and prefaces. At a medical meeting several days ago, someone said impatiently, "Let's quit talking about past history and start worrying about the present."

That is often the right comment to make, but to worry about the present or to try to make it into the future without knowledge of where we started from is to invite frustration, sometimes disaster, more often dull failure. Medical educators have to talk about Flexner. However, once a work like the Flexner Report has taken on canonical qualities, it can be used dangerously. An official work acquires official interpretation and that interpretation soon takes the place of the work itself. At some point, criticism becomes heresy.

Something else which happens is that a work begins to be lifted up out of history. Because great works have a quality of timelessness, this is natural; but if they lose their roots in time, they may become irresponsible agents seeming to cause history without themselves having been caused. To regard a person or event as uncaused but causing is, I suppose, a kind of idolatry.

Idols call forth idol smashers and the work, the author, and even the time fall under the hammer.

The Flexner Report has not been subject yet to many iconoclastic attacks, although these are certain to come. The need for a vigorous preclinical education in the basic medical sciences is being, not always directly, but obliquely, questioned. Moving the preclinical work into the undergraduate college years has been urged, tried, and urged again, always at the expense of

a liberal education. Skills are set before knowledge.

The full-time clinical teacher and researcher begins to emerge as the cause of overspecialization, concentration of physicians in the suburbs, inhumanity of medical care, and rising costs; and he in turn was caused by Flexner.

Abraham Flexner saw the German university, especially the German medical school, as a proper model for this nation. America probably had had the worst medicine and the poorest medical education in the western world in the last half of the nineteenth and early twentieth century. The German medical school from 1870 to 1914 was vigorously scientific and strong in research; the new German Empire was leading the world in scientific medicine. Johns Hopkins was the only school in North America which could be compared in quality to the German schools, and its founders had been strongly influenced by them.

With the help of the Carnegie Foundation and the Rockefeller Foundation, and carried along by his own indomitable personality and powerful convictions, Flexner caught hold of American medicine at a time when it could be turned around. Probably the Report was "one of the most influential documents, where higher education is concerned, ever compiled."¹ It was the culmination of a long effort to reform medical education which had been started by the American Medical Association 75 years before; it was the beginning of America's world leadership in medicine. The torch would pass to these shores after 1914.

The university medical school which emerged in North America in the years following the Flexner Report was associated with the rise to preeminence of German medicine in the period between the Franco-Prussian War and World War I.

We need to understand all the reasons for that association of universities, science, and quality before we begin to dismantle it. Bulletin Number Four and later, Bulletin Number Six, may not be guides for 1976. They were written in 1910 and 1912, in a time which almost no one now living can recall or even imagine. For that reason the Flexnerian school may not be a perfect fit for our times; we need however to beware of rejecting it for anti-intellectual and anti-scientific reasons. Idol smashers do not always raise us to some higher plane of understanding or achievement, nor are heresiarchs always our benefactors.

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EDITORIALS

Full-Time Chiefs of Service: The Issue is Quality of Care

The Joint Report of the Council on Medical Education and the Council on Medical Services of the AMA on the subject of "Full-Time Program Directors and Chiefs of Service" was presented in the November, 1975 issue of *Connecticut Medicine*. No one can quarrel with the recommendations that the duties and responsibilities of such jobs be "clearly delineated"; that all physicians including salaried hospital chiefs be subject to professional review of quality of care or that patient care professional decisions be under the direction and control of the organized medical staff. Nevertheless, there are those who challenge the value of full-time chiefs of service on the basis of the fact that they may not reduce the cost of patient care irrespective of whether they contribute to improving the quality of that care.

In fact, AMA Resolution 83 (A-74) was introduced by the Connecticut delegation to call for a study of "full-time program directors and chiefs of service." It was prompted in part by "the developing trend on the part of . . . hospital governing boards to attempt to exercise direction and supervision over staff physicians" by appointment of "salaried department heads, salaried chiefs of staff and a medical staff executive committee of salaried physicians." In such a situation "the members of the attending staff then become subject to the direction of the salaried physicians" and "the medical staff is not self governing and has no separate existence as the deliberative medical body."

In a voluntary, not-for-profit hospital whose staff is largely composed of physicians in private practice unilateral creation of full-time physician positions is unwise and not in the best interest of maintaining or

improving the quality of patient care. Although it is true that a hospital can save money for patients (but not for itself) by hiring certain categories of physicians whose gross fee-for-service incomes would be higher than the salaries paid little would be gained in the long run should our hospitals (mendicants that they are) decide to use their monopolistic territorial prerogatives to compete with the private entrepreneurs they ultimately depend upon for providing round-the-clock quality care for patients.

On the other hand in many hospitals where good lines of communication exist between Board, Administration and Staff (an imperative in view of increasing external controls) joint decisions have been made to hire full-time department directors and assistants to perform functions no longer provided by a volunteer staff. Their medical staffs have agreed that modern technology has become too complex, the peer review system too complicated, the maze of external controls too labyrinthian and the physician re-education process too important to be left unattended or uncoordinated. All over Connecticut, hospitals have hired salaried physicians, with the full consent if not at the insistence of private staff physicians who in most cases are the body politic served by the physician-employee. To my knowledge no one but the CRMP daydreamers has ever stated that the purpose of hiring such full-time chiefs was to save money.

Maintaining or increasing the quality of patient care doesn't save *money*—it saves lives and minimizes the period of discomfort of our patients. Developing programs ensuring the medical expertise of staff members helps patients and physicians, but doesn't cost less. Quality in medicine cannot be obtained at discount rates, in or out of hospitals.

Add to this the fact that the new, powerful Federal health planning programs which will lead to even more rigid controls over health dollars mandate more

and more interaction between our hospitals and between hospitals and medical schools. Closing feedback loops in PSRO programs, dealing with regional problems of emergency medical service, providing programs in mental health and alcoholism, dealing with malpractice and maloccurrence problems and providing for primary care needs all will demand careful advocacy of the strengths and attention to the weaknesses of each of our hospitals. Vigorous pursuit of a professionally rational priority list for funding of patient-care facilities and services in each hospital will require a strong, coherent medical constituency which must interact intelligently with the local hospital Board and Administration in setting those priorities. Once set the medical component must be prepared to advocate the hospital's case before the new Regional Health Service Agencies or the Hospital Commission.

Our patients require protection in the hostile world of limited resources in which "commissions of the well" intend to restrict funding for the care of the ill in the name of cost containment. Such commissions have so far demonstrated little or no concern for the quality of care. Each of us must double our efforts to work together so that the certified amateurs in control don't overwhelm our sick patients because we professionals have been bickering instead of making a significant input to their deliberations. When we send professional representatives to commissions or planning agencies they should be there as representatives of our collective wisdom and not merely hip-shooters reacting personally to each issue presented. Those who argue cost control for all but their own specialty do not faithfully represent the broad interests of patients.

Let's put an end to rhetoric about "full-time," "part-time" or "private" practice differences. Let's concede a small minority of each group are less than energetic, less than highly competent, less than totally patient-oriented, less than cooperative. The tasks ahead require that all the rest of us move closer together. Let's not turn out to be the people our mothers always warned us against. The enemy is not *us*, it is *disease*; the victims are not *us*, they are our *patients* who have disease; the strategy is to figure out how to allocate resources in the *best interests of those patients* and use every means at our command to influence the decisions of the planners and funders. *The first priority of all physicians is quality control*, not cost control. In this respect the full-time chief can be and is a useful member of the medical community as we together pursue our mutual goals on the patient's behalf.

Howard J. Wetstone, M.D.

Director, Ambulatory Service
Hartford Hospital

Strategies and Remedies for Confidentiality Deficits in Title XX and Title IV D Legislation

The most serious deficits in Title XX and IV D statutes¹ for physicians are in the realm of inadequate confidentiality safeguards. The broadening of eligibility requirements under Title XX has brought 15% of the Connecticut population under the umbrella of Federally funded health and welfare services, services now available to large numbers of the white middle class. In a review of expected plans for 39 States, the DHEW estimates that 27 million citizens will be served.² In the past, under Title IV A (AFDC), the safeguards extant had not been challenged by civil libertarians or recipients and violations of State welfare confidentiality statutes by State functionaries were not brought to court. Poor people often have considerable difficulty in coping with administrative bureaucracies and recipients are frequently fearful of their dealings with officials who control access to their subsistence benefits. So as a group, the poor would not tend to seek legal redress for grievances. Additionally, legal aid services have been slow in taking into account the advances in computer sciences which might have suggested modifications in Federal welfare confidentiality policy in effect since 1939. These policies were originally designed to encourage applicants and recipients to reveal information to State welfare agencies.

When Title XX went into effect on October 1, 1975, HEW officials on the middle levels in policy-making and implementation of welfare laws were somewhat bewildered and affronted by inquiries made by national organizations and members of Congress pertinent to data safeguards. The queries were deemed a little uninformed, posed by arrivistes on the scene. Because of the size of this largest Department in the Cabinet, the content and meaning of the discussions in the past few years by HEW lawyers and policy-makers were not wholly shared with the implementers across the street. The principles derived by the Secretary's Advisory Committee that produced *Records, Computers And The Rights Of Citizens* in 1973³ were incorporated into the Privacy Act of 1974⁴ yet the letter of that Act was not used in the writing of new regulations to cover Titles XX and IV D. The Privacy Act assumes that each citizen has the right to know which data banks with personal information are maintained by over one hundred Federal agencies, with rights of access for adults and minors defined, and a procedure established for the correction of disputed records. Educational programs and criminal penalties for confidentiality breaches by civil servants are provided.

The DHEW regulations for Titles XX and IV D still rely upon 205.50^{5,6} which place the burden of enforcement of safeguards upon pre-existent and ineffective State law, and not upon the new national standards set forth by the Privacy Act. Edward Gleiman, Director of the Fair Information Practices staff in the Secretary's office,⁷ questions the effectiveness of the Privacy Act and is impressed that it has caused confusion in the bureaucracy. However, the *Privacy Journal*⁸ states clearly that implementation of the Act is going remarkably smoothly. Even if the Act's compliance develops slowly, the hortatory impact of its intent and language has put government servants on notice.

The States, in response to the accrual of large amounts of data have begun to police themselves, as noted in the Minnesota Acts,⁹ which have been models for Utah¹⁰ and Arkansas (whose fair information practices law goes into effect in April, 1976). The Minnesota Acts are similar in design to the Privacy Act but exclude medical and psychiatric information covered by other State statutes. When experience is developed in the accessibility of Federally generated medical and psychiatric records under the terms of the Privacy Act and the PSRO Confidentiality Policy, it is likely that amendments to individual State acts will be made.

Public interest law firms (Center For Social Welfare Policy and Law, the Washington Research Project Action Council and the ACLU) have addressed themselves with good effect to the glaring substantive deficits of Title IV D. But they have not vigorously pursued the confidentiality issues inherent in all of the Social Security Act amendments beyond successfully campaigning for Title IV D recipients being given the guarantees explicit in 45 CFR 205.50.¹¹

A leading group in the growing national movement to provide confidentiality safeguards in accordance with the Privacy Act has been the American Academy of Child Psychiatry, whose attention was drawn to the issue in September, 1975 through the negotiation of provider contracts by the Department of Social Services of Connecticut, which administers Title XX, and the Association of Child Guidance Clinics of Connecticut. The Academy representatives have pressed the matter with members of Congress, especially with Senator Lowell Weicker, Jr. on Nov. 17, 1975, who has special responsibilities for the Privacy Act in his role on the Government Operations Committee of the Senate. Meetings with Carol Parsons, Executive Director of the Privacy Protection Study Commission established by the Privacy Act, on October 30, 1975, and HEW middle level implementers on November 17, 1975 and high level health

policy-makers on December 1, 1975, have shaped the Academy's approaches to the problem.

The simplest solution would be to reissue the regulations in the model of the Privacy Act. Donald Thayer, an HEW lawyer,¹² and Johnnie Brooks,¹³ have observed that the Secretary does not want Federally dictated confidentiality regulations to mandate State behavior, a State's rights issue. Secretary Matthews believes that the States should tighten up their own confidentiality statutes. No such concern for State's rights was expressed when PSRO Confidentiality Policy Guidelines were adopted by the Secretary for the nation,¹⁴ rather than asking each State PSRO Council to recommend to its constituent PSROs the establishment of its own local policy.

The slow evolution of State privacy acts to replace the unworkable welfare confidentiality statutes cannot keep pace with the Federally mandated rapid development of welfare data banks. There is little reason to expect that in the future, States will wholly expunge the excessive data they have collected, which include religious, family, educational and ethnic data far beyond the regulations¹⁵ of the Title XX law. Lawrence Marostica, Connecticut Department of Social Services Title XX Administrator, defends the excessive collection of data in our State by citing the demands of the DHEW in giving his section four pounds of documents to act upon, one month prior to Title XX going into effect.¹⁶ According to Marostica, the documents include 800 pages of program outlines, 600 pages of audit manuals and 80 pages of Social Security requirements. He claims that the documents will ultimately require responses derived from the excessive information requested on the Connecticut form W-2000.¹⁷ This assertion is hotly disputed by the DHEW implementer for Title XX, Mike Suzuki, who states that the form W-2000 resulted from a misinterpretation of the regulations.¹⁸ The National Legal Aid Association developed a statement on Dec. 17 which points out that all the data sought under DHEW regulation 45 CFR 228.27 is a mis-reading of the Title XX law (P.L. 93-647) and a betrayal of the will of the Congress. What is required is that data be maintained and protected at the site where it is generated and that unidentifiable aggregated information be sent to the central State government for purposes of accountability to the Feds. The Federal people may wish to spot-audit the generators in the periphery.¹⁹

An objection to the application of the Privacy Act to Title XX raised by Attorney Thayer of DHEW is that last year in New York there were 50,000 fair hearings and in California over 30,000 fair hearings for applicants and recipients to appeal adverse findings by the State welfare departments. If the Privacy Act provisions became regulations for Title XX,

he predicts an onslaught of hearings beyond any previous experience which will be administratively crippling and costly. Of course, the other side of the argument is that having examined records, applicants or recipients may decide not to opt for fair hearings.

Another recourse is a statutory change in the Title XX law. The potential opposition of Senator Russell Long and Senator Sam Nunn might be mitigated by the reasonable argument that such an amendment will diminish prospects of a national welfare system.

No matter which direction attempts at remediation take, a necessary substrate for change is a national group of organizations mounting a campaign directed at:

1) informing members of Congress of the urgency of speedy action.

2) informing statewide organizations in health and welfare activities of the present risks so that they can develop a mechanism for collecting incident reports. They could also call upon State government agencies and officials to examine the prospects of a State privacy act and encourage them to address their Federal counterparts to change the regulations.

3) engendering grass roots support for a regulations change by applications and recipients, civil libertarians, providers and in-State agency civil servants.

At the time of this writing, the American Academy of Child Psychiatry has asked for the support of the National Consortium for Child Mental Health Services²⁰ and the newly formed National Commission on the Confidentiality of Health Records²¹ in requesting government reviews, legal analyses and new remedies for confidentiality deficits in all the Social Security Act amendments (all Titles).

A coalition of concerned citizens is being organized in Connecticut to thoroughly study the available options for change in this State. Here is an opportunity for Connecticut physicians to provide support and leadership in a matter which affects us directly as citizens and professionals.

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Women Physicians

A steadily-increasing proportion of women has been entering medical schools in this country since 1970; women presently constitute over 25 per cent of the medical student body in a number of schools.* Will medical specialty choice and the income level of women physicians become more comparable to those of men as their proportion increases?

As population growth slows, competition for high status professional positions is likely to increase and the chances of women attaining equality in the professions will tend to diminish.¹ Retrospective studies

*Several sources can be relied on to provide continuing information regarding women physicians. On a national level, the *Journal of Medical Education* periodically publishes updated material on women in medical training. The Center for Women in Medicine, Medical College of Pennsylvania, Philadelphia, Pa., headed by Dr. Nina B. Woodside, is engaged in ongoing research and monitoring of the participation of women in medicine. The Office of Health Resources Opportunity, an office within DHEW, is concerned with the future professional role and activities of women physicians.

such as that of Cohen and Korper^{2a&b} on the practice patterns of women physicians licensed in Connecticut give one pause in considering the prospects for equalization of the status of professional women through training. They confirm yet again that women M.D.'s have lower incomes compared to men physicians, and tend to cluster in a range of less prestigious specialties, as has been noted elsewhere.^{3,4} The same phenomenon has also been found true of women with doctorates in other fields, who have lower salaries, lower employment status, fewer supervisory responsibilities, and who receive less recognition.⁵ In those countries with a high proportion of women physicians, the whole profession is of lower status and pay.^{6,7} In the Soviet Union, for example, women comprise 80 per cent of the medical profession; they are much less common in higher-status scientific and technological fields.

The clustering of women physicians in low-status, low-pay positions can be attributed to several factors. First, women in a male-dominated profession must choose between denial of their traditional feminine role in identification with a male professional role;⁸ or acceptance of their minority status by selecting such "feminine" specialties as pediatrics, psychiatry, and family practice. It is easier to accept a more conforming "feminine" role than to break into traditionally male-heavy specialties. "The field [of specialty choice] may narrow by virtue of the desire of the student to feel accepted and needed rather than to continue to fight for recognition."⁹

Another major constellation of factors influencing women physicians' choice of specialty and type of practice concerns the regularity of working hours, potential for part-time practice, and flexibility of scheduling, both during training and afterwards.^{**} Significantly, Cohen and Korper observe that women M.D.'s gravitate toward positions "which allow fixed hours and part-time practice." Such positions, of course, also tend to be low-paid and, in many cases, low-status as well.

To propose that "female physicians can make a unique contribution in medicine through their interest in specialties that do not attract adequate numbers of men,"⁶ is to ignore the discriminatory and constraining forces which impel women into such low-pay and low-status positions.

The time and responsibility demands of women's traditional roles as wives and mothers interfere more with the career patterns of women physicians than do any biological constraints. Particularly striking in Co-

hen and Korper's Table IV (Part II) is the number of career interruptions attributable to the wife role: husband's career, marital stress, marriage. They also document that married women physicians choose different specialties than single women, although they do not relate career choice to number of children, if any.

While both male and female physicians have high suicide rates compared with the general population, women physicians' higher suicide rate is most pronounced at a younger age (under age 45), indicating high stress during this period.¹⁰ Single and separated/divorced women M.D.'s are particularly at risk, suggesting that avoidance of marriage per se does not resolve the difficulty.

How might this dilemma of career versus social role be resolved? Special programs such as day-care, part-time training, and tax advantages for women physicians only tend to perpetuate the notion that special arrangements must be made to "allow" women to practice medicine. The inequity of such arrangements can best be seen when one considers couples of whom both are physicians (over 60 per cent of Cohen and Korper's sample). Accommodations for the domestic needs of dual-professional families should be given to both men and women equally, in the form of more flexible schedules, tax advantages for domestic costs, child care facilities, and generally shorter working hours. The medical profession in other countries (e.g. Sweden and Australia) is ahead of the United States in this regard. Here in Connecticut, the Yale University School of Medicine is to be commended for its acceptance of part-time faculty, male and female, without jeopardy of pay or academic rank.

The same career self-determination which is exercised by male physicians should be available to females. Women who go into medicine, who have the capabilities and determination to enter and complete their medical training, should not be constrained to limit the application of their skills to a narrow range of specialty and career-pattern options. To be thus constrained is not only a violation of their rights as individuals, but is also a loss to society of the best and most appropriate use of precious individual talents.

Katherine Finseth, M.D.

*Liaison Officer on the Status of Women
Yale University School of Medicine*

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^{**}Curiously, of the "feminine" specialties, neither pediatrics nor family practice would seem a suitable specialty from the time standpoint, although psychiatry may be, indicating that time constraints may be less important than the nature of the specialty.

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Death from Where We Stand

Most experts involved in the problems pertaining to a definition of death feel that the New Jersey case of Karen Ann Quinlan should never have gone to the courts for resolution. A single judge, after hearing the testimony of experts in the adversary method traditional to common law, ruled that no one could legally "pull the plug," because Karen "had no constitutional right to die."

By any definition of death we now have, she still lives. It must be emphasized that the judge's decision is strictly circumscribed by the facts of that case alone, and only applies to the geographic legal jurisdiction of that court in the state of New Jersey. Also, as of January 6, 1976, it was to be appealed to the highest court of the state.

Though legal resolution of the case was unsatisfactory on many counts, I do think that discussion of it was necessary in that it served to focus the attention not only of the medical profession, but of society, on the nuances of "brain death" and "irreversible coma." It certainly brought out the fact that there is still no consensus in the profession on the issues involved. It might be worthwhile to consider where we are, how we got there, and what we have to do for the future.

Only two decades ago, at the commencement of the era of transplantation, the inadequacies of the long accepted definition of death—cessation of the heart and respiration—were revealed. Transplant teams early realized that to optimize the success of the procedure they had to remove organs as soon as

possible after the death of the donor so as to improve "take" in the donee. They soon found, however, that they could not determine as well as they liked the precise moment at which death occurred and that there was, in fact, no precise "point in time." By signing death certificates by the minute hand, physicians had for years endorsed the legal fiction that death occurred at a precise moment, when as a matter of fact it was a process.

The difficulty was accentuated by the discovery of new machines and techniques that could artificially maintain the life of vital organs in a dying patient by mechanical means, even in a patient whose brain was totally dead. It became obvious that before society would accept a new definition of death, there ought to be a medical consensus about death, preferably worldwide but at least national. And though individuals or committees could contribute to or formulate a new definition, it would have to carry the imprimatur of an authoritative organization.

The World Medical Association, at its August 1968 meeting in Sydney, Australia, attempted to do this. In a statement on organ transplantation, it included this declaration on death: "This determination will be based on clinical judgment supplemented if necessary by a number of diagnostic aids of which the electroencephalograph is currently the most helpful. However, no single technological criterion is entirely satisfactory in the present state of medicine nor can any one technological procedure be substituted for the overall judgment of the physician."

At the June 1968 meeting of the House of Delegates of the American Medical Association, its Judicial Council issued a report on the Ethics of Organ Transplantations, including this statement about death: "Death shall be determined by the clinical judgment of the physician using the necessary available and currently accepted criteria."

In August 1968, *JAMA* published the now famous report of the Ad Hoc Committee of the Harvard Medical School on A Definition of Irreversible Coma. It stated: "Our primary purpose is to define irreversible coma as a new criterion for death," and listed methods by which this determination could be made.

In December 1968, the Board of Trustees of the AMA issued a report on heart transplantation, adopted by the House of Delegates, which included a clause on death: "The cause of death must be evident and of irreversible type. The fact of death must be established by adequate current and acceptable evidence in the opinion of the physician making the determination."

Note, however, that neither the World Medical Association nor the AMA included "brain death" in their statements as being sufficient to consider a pa-

tient dead. The House of Delegates of the Connecticut State Medical Society in May 1970 decided to fill this void; it passed the following resolution: "In patients whose cardio-respiratory system is being supported by artificial means, death may be determined on the basis of complete and irreversible loss of function of the entire brain, from an evident cause, as established by generally accepted current and recognized scientific and clinical methods." I believe that this was the first such statement passed by any state medical society in the country that addressed itself to the issue of brain death. Furthermore, it seems to satisfy all the questions and problems brought out up-to-date.

Also in 1970, the state of Kansas enacted a statutory definition of death, the first legislative action in our nation and in the common law countries, legalizing the concept of "brain death." There is still no consensus about the necessity or wisdom of such statutes, though sentiment is growing throughout the country for their adoption.

Acting on the premise that the AMA, through its policy-making House of Delegates, should issue a clear statement on death, the Connecticut delegation introduced a resolution at its June 1973 meeting asking the Judicial Council "to draw up if possible a guiding and consensual principle which may be acceptable to the medical profession throughout the country . . . regarding death," and report back to the House at its next meeting, meanwhile asking for a moratorium on passage of any statute defining death.

At the next House meeting, in December 1973, the Judicial Council recommended that the House affirm its statement of June 1968, "Death shall be determined by the clinical judgment of the physician using the necessary available and currently accepted criteria." Though accepted by the majority, it was totally rejected by the Connecticut delegation.

Because this statement seemed so obviously inadequate, even more so in view of extensive discussion by various experts during the following year, the Connecticut delegation at the June 1974 meeting again introduced a similar resolution: "That permanent and irreversible cessation of function of the brain constitutes a criterion for determining death." Though the Reference Committee recommended nonadoption, an impassioned plea by Dr. E. Tremain Bradley on the floor of the House recommended a substitute resolution which was adopted: "Permanent and irreversible cessation of function of the brain constitutes one of the various criteria which can be used in the medical diagnosis of death." But even this statement has provoked questions, one especially—by "brain," was part or all of the brain meant? And some asked—How to determine brain death? Also, included in the state-

ment was this qualification—"Medical diagnosis of death."

As brought out by Lance Tibbles, J.D., in the November 1975 issue of *Connecticut Medicine* the concept of brain death is one for society to decide, and the methods of determination are for physicians. There is general agreement that death must be determined by a physician. There has been fear that the fifty different legislatures would draw up hasty, ill-conceived and poorly formulated statutes to define death. However, by analogy, the same disparities could occur by the judge-made, common law route. This difficulty could be resolved by federal legislation. Though this would be binding on all states and be uniform, our federal system is such that Congress is reluctant to legislate in what might reasonably be considered state jurisdiction. The same goes for the courts. However, a decision by the U.S. Supreme Court, as in the abortion case, would be definitive and binding on the whole nation. But this would be possible only after a long, drawn out, questionable process of litigation.

A compromise device is to utilize the National Conference of Commissioners on Uniform State Laws, a committee made up of outstanding legal scholars in the country. As in the Uniform Anatomical Gift Act, this group will occasionally draw up a model law to meet a national problem, referring it to the American Bar Association for approval, and then to the various state legislatures, with the hope that it or a reasonable facsimile could be passed as a statute.

This is what is occurring at the present time. Though the diagnosis of death must be made by a physician, the law, acting for society, cannot sit back where there is uncertainty in such an important problem. Legally, death must be clear in matters relating to homicide, burial, family regulations, inheritance and all the legal and moral rights possessed by and the duties owed to a living human being.

At its summer meeting, the House of Delegates of the American Bar Association adopted a legal definition formulated by its Committee on Medicine and Law, which it will send and recommend to the various state legislatures. It says: "For all legal purposes, a human body with irreversible cessation of total brain function according to usual and customary standards of medical practice shall be considered dead." Though this does not seem to conflict with any statement on death by the House of Delegates and the Judicial Council of the AMA, the AMA is still adamant that no statutory definition of death is necessary.

This is the grey area in which the medical profession now finds itself. Since each state legislature will probably consider the recommended definition by the American Bar Association, each state medical society

also ought to put this definition on its agenda for consideration: Should it be for or against the definition, and should it so advise its legislature?

But a definition of death acceptable to society still does not address the problem of when to pull the plug on a Karen Ann Quinlan. This problem would seem infinitely more difficult ethically, socially, medically, and legally than recognizing for definition the concept of total brain death.

The problem is as exclusively complex as the solution, but no one understands the medical aspects of the problem as fully as our profession. It is incumbent upon us, therefore, to take a leading role in arriving at a solution, acceptable to medicine, to the law, and to the public.

FRED FABRO, M.D.

SPECIAL NOTICES

YALE UNIVERSITY SCHOOL OF MEDICINE

Perinatal Medicine

March 17, 24 and 31, 1976

A three-day postgraduate course entitled "Perinatal Medicine" will be held on March 17, 24 and 31, 1976 at the Mary Harkness Auditorium, Yale University School of Medicine. It will be sponsored by the Departments of Pediatrics, and Obstetrics and Gynecology. This course is approved for Category One credit (7 hours for each day) by the American Medical Association.

For further information, contact the Office of Graduate and Continuing Medical Education, Yale University School of Medicine, 333 Cedar Street, New Haven, CT 06510, 432-4582.

Advances in Clinical Medicine

May 24 - 28, 1976

A four-day postgraduate course entitled "Advances in Clinical Medicine" will be held May 24-28, 1976 at Yale University School of Medicine. It will be sponsored by the American College of Physicians and Yale University School of Medicine, Department of Internal Medicine.

Inquiries should be addressed to: Miss Myrtle H. Jackson, American College of Physicians, 4200 Pine Street, Philadelphia, PA 19104.

ST. FRANCIS HOSPITAL

April 21, 1976

The Immunology Division of the Department of Laboratories is pleased to announce as a part of the continuing series of lectures on "The Current Concept and Trend in Clinical Immunology."

April 21, 1976, "PATHWAYS OF COMPLEMENT ACTIVATION IN HUMAN DISEASES," Irwin H. Lepow, M.D., Professor and Head of Department of Medicine, University of Connecticut School of Medicine.

TIME: 11:00 a.m.—Noon

PLACE: Amphitheater, ST. FRANCIS HOSPITAL
114 Woodland Street
Hartford, Connecticut

FOR INFORMATION: Jayson Hyun, M.D., Director of Immunology Laboratory, Tel: (203) 548-4368

Letters To The Editor

Letters to the Editor are welcomed and will be published, if found suitable, as space permits. Like other material submitted for publication, they must be typewritten *double spaced* (including references), submitted in duplicate, must not exceed 1½ pages in length and will be subject to editing and possible abridgment.

NEW YORK TIMES EDITORIAL

To the Editor: In your August edition of *Connecticut Medicine*, I noticed that you printed an editorial on page 471 taken from the *New York Times*. Instead of reprinting this editorial it might have been better to write to the *New York Times* and remind them that the AMA had no victory in court against government regulations for review of hospital utilization. You need not have told them that it was a capitulation of the AMA to the forces of HEW but you could have reminded them that it was a withdrawal of the suit and not a victory in any sense of the word.

In any event, if you didn't let the *New York Times* know this, at least you should have made some comment of your own to the effect that this was not a victory and that the *New York Times* was in error. I think that the lack of militancy in the AMA is deplorable and it makes me wonder after a membership of 28 years whether I should continue this membership.

I enjoy *Connecticut Medicine* very much and I think you do a great job.

M. A. Crispin, M.D.

West Palm Beach, Florida

EDITOR'S NOTE: The *New York Times* editorial stated: "... through its (AMA) recent court victory against government regulations for review of hospital utilization." Rather than a voluntary "withdrawal" by HEW, it was a definite legal victory in that Judge Hoffman of the Federal District Court granted the AMA an injunction "legally commanding" the HEW to withdraw the regulations.

However, HEW has not given up. It has since proposed several regulations, none of which has satisfied the AMA. In order to accomplish its purposes, HEW must satisfy the judge. The AMA has promised to sue HEW again in case it tries to impose utilization review regulations.

I merely wish to remind Dr. Crispin that the AMA, acting through the Board of Trustees on policies adopted by the House of Delegates, has changed so that in the future it will go to court over unreasonable and unjustifiable regulations by HEW, as it did in this case. Incidentally, this case cost about \$250,000 in legal fees.

Also, on July 28, the AMA filed suit against HEW when it formerly announced regulations setting maximum allowable costs for drugs administered to patients under federal health care programs. The days of "lack of militancy in the AMA" are over. The Journal will keep its membership advised about such cases.

I thank Dr. Crispin for his comments about *Connecticut Medicine*. We all are trying.

Connecticut State Medical Society members are invited to write to the Editor expressing their opinions or giving information on matters of mutual interest. The Editorial Committee reserves the right to select or reject communications.

FROM THE EXECUTIVE DIRECTOR'S OFFICE

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Scientific Activities*

Summary of Actions

Council Meeting

Wednesday, December 17, 1975

I. Attendance

Present in addition to the Chairman, Dr. D.A. Grendon, and the Vice Chairman, Dr. J.K. Freedman, were: Drs. Van Syckle, Spitz, Friedberg, Johnson, Backhus, Root, Jr., Hess, Cramer, Fabro, Granoff, Kamens, Rubinow, Ragland, Jr., James, McGarry, Beck, Canzonetti, Harkins, Magram, Mendillo and Barrett.

Also present were: Mrs. Lindquist, Mr. Tomat, Mr. Sweeney, Dr. Steven Bongard (Associate Dean for Student Affairs, UConn Medical School) and Dr. Richards.

Absent were: Drs. Nolan, Gardner, Bradley, Krinsky, Sonnen, Klare, Robinson, Eslami, Dambeck and Bird.

II. Routine Business

Approval of Minutes

As published and distributed (with the agenda for the House of Delegates meeting, 11/19/75), it was VOTED to approve the minutes of the Council meeting of 10/23/75.

Life Memberships

It was VOTED to approve applications for Life Membership received from the following eligible Active Members:

James D. Balfour, The William W. Backus Hospital,
Norwich

Aaron Bobrow, 21 Long View Road, West Hartford

James E. Crane, 965 Hope Street, Stamford

Herman S. Cutler, 1100 Dixwell Avenue, Hamden

A. Elmer Diskan, 29 Haynes Street, Manchester

Norman H. Gardner, East Hampton

Stanley L. Harrison, 1036A Heritage Village,
Southbury

Laura K. Howard, 25 Avonside, Avon

John P. Iannotti, 78 Whiting Street, Plainville

Charles E. Jacobson, 172 East Center Street,
Manchester

Robert R. Keeney, 29 Haynes Street, Manchester

Joseph Klein, 85 Jefferson Street, Hartford

Stanley J. Motyka, 10092 Merrimac Drive,
Huntington Beach, CA

William J. Murcko, 28 Wheeler Lane, Torrington

John B. Ogilvie, 95 Morgan Street, Stamford

D. William Pasquariello, 2969 Main Street,
Bridgeport

Sidney L. Penner, 158 Mill Hill Avenue, Bridgeport

John Purney, 300 Main Street, Bristol

Harvey H. Sirota, 3 Saunders Street, East Hartford

Robert Walker, 10 Flagstad Road, West Hartford

Date of Next Meeting

The Chairman set Thursday, January 29, 1976 as the date for the next meeting of the Council.

III. Old, New and Special Business

Election of Student Members

It was VOTED to elect to Student Membership twenty-five Connecticut residents who are enrolled in U.S. medical schools. The names of those elected will be published in an early issue of the Journal.

Resignations, Appointments, Etc.

(a) *Nominees for State Commission on Medicolegal Investigations:* The Council received a request from Governor Grasso to submit three nominees for her appointment of one to serve as CSMS representative on the subject Commission. The Council considered three nominees suggested by the CSMS Section on Forensic Medicine but determined that the three members would be ineligible to serve on the Commission because, as hospital pathologists, they performed autopsies and other procedures as persons paid for such services by the Office of the State's Chief Medical Examiner. The Council was, therefore, unable to grant the Governor's request for *three* nominees but VOTED to submit the name of a qualified and interested member of the Society as follows: Vincent D. O'Neil, 72 Southwood Road, Newington—06111. Dr. O'Neil is retired from service with the Aetna Life and Casualty.

(b) *CSMS Representative to the Connecticut Medical Institute, Inc.:* The Council VOTED to accept, with regret and thanks for past service, the resigna-

tion of James D. Kenney, New Haven, as a CSMS representative to CMI. Dr. Kenney also informed the Council that he is resigning his post as president of the Institute.

In conjunction with taking this action, the Council VOTED to invite Dr. Kenney to attend the next meeting of the Council to report and give his views on the present and future status of CMI.

- (e) *Editorial Committee of Connecticut Medicine*: It was VOTED to accept the resignation of Benjamin J. Lord, Jr., Norwich, as a member of the Committee.

Re CSMS 1971 Connecticut Relative Value Guide

At the House of Delegates meeting on 11/19 questions were raised as to the current usefulness of the subject RVG to the membership and to third party payors. Pursuant to these questions, the Council VOTED to request the Committee on Third Party Payments to undertake an evaluation of the CSMS 1971 Connecticut Relative Value Guide as to its usefulness in 1975 and thereafter and of possible alternatives to it, with a view to advising the Council at the earliest possible date with respect to the type of RV guidelines that should be utilized in the future.

Ad Hoc Committee to Study County Association Review Procedures

Pursuant to House of Delegates approval of a recommendation contained in the President's special report on "Physician Care and Discipline" (11/19/75), the Council VOTED to request the Chairman to appoint an ad hoc committee and designate the chairman thereof "to undertake forthwith: (1) A critical review, in cooperation with the county associations' leadership, of the procedures now being followed by the several component associations in their handling of complaints against physicians that are registered with, or referred to, them for investigation and adjudication, for the purpose of promoting uniformity of such procedures throughout organized medicine's existing statewide system of peer review, and (2) develop a plan by which the Society could achieve public identity and official status as the primary agency in Connecticut with which complaints against physicians should be filed (as outlined by Dr. Van Syckle in his report). Further, that the Council be directed to report on these undertakings, with recommendations, to the House of Delegates at its next meeting."

Report—Committee on Continuing Medical Care and Rehabilitation

It was VOTED to accept for filing a report submitted by the Committee concerning the professional liability (responsibility) of the medical directors of extended care facilities under the provisions of the Connecticut

Public Health Code, and to endorse a subject statement recommended by the Committee as follows:

"It seems reasonably apparent that the situation (in an extended care nursing home) should be substantially no different from the liability or responsibility which would accrue to other supervisory medical personnel in medical institutions, such as the various chiefs of staff or departments in the average hospital. There may or may not be personal liability in any given factual situation, and it appears to us that it is the choice of the individual whether he will accept such liability or responsibility as may go with the position. We should add that it would probably be prudent for a Medical Director to investigate and make sure that such liability as he may incur will be covered by adequate malpractice or other similar insurance coverage."

Report—CSMS Representative, Commission on Hospitals and Health Care

It was VOTED to receive as information with commendation a written report filed by Sidney L. Cramer, Hartford, CSMS representative to CHHC, which concerned the manner in which the Commission handled a request of a community hospital to expand its emergency room facilities. In the Commission's view, the hospital should seek to develop innovative programs to better provide primary care rather than to expand physical facilities. Dr. Cramer also reported verbally on the results of a CHHC survey of open heart surgery facilities in hospitals around the state, commenting that this survey will probably result in another survey being made as to the quality of the open heart surgery performed in the various institutions.

Report on Status of Ambulatory Care Study and Request for Funds

The Council was joined by Frederick C. Weber, Jr., CACS Principal Investigator, and James E. C. Walker, CACS Co-Principal Investigator, who brought the Council up to date on the current status of the Study with respect to its finalization and to its need for further funding. In brief, they reported that approximately two months of additional work needs to be done before the Society's contractual obligations to HEW can be fulfilled; that additional funding from HEW will definitely not be forthcoming; that the due date (12/31/75) for submitting the "deliverables" to HEW can undoubtedly be extended; that, as of 12/19/75, the CACS office will have to evacuate its present premises (Yale University property); and that CSMS funding in the amount of \$6,867 is requested for the period 12/15/75 - 2/13/76.

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ease, dehydration, heat cramps and hyperkalemia.

Warnings: Do not use excessively.

Precautions: Administer with caution and adjust to the requirements of the individual patient. The patient should be checked frequently and periodic ECG and/or plasma potassium levels made. Use with caution in patients with cardiac disease. In hypokalemic states, attention should be directed toward the correction of the frequently associated hypochloremic alkalosis. **Patients should be cautioned to adhere to dilution instructions.**

Adverse Reactions: Potassium intoxication indicated by listlessness, mental confusion, paresthesia of the extremities, weakness of the legs,

flaccid paralysis, fall in blood pressure, cardiac depression, arrhythmias, arrest and heartblock. Vomiting, nausea, abdominal discomfort and diarrhea may occur.

Dosage and Administration:

One 15 ml. tablespoonful (20 meq. of potassium chloride) **diluted** in 4 ounces of water or fruit juice twice daily (preferably after a meal), or as directed by physician.

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Following the presentation made by Drs. Weber and Walker, the Council VOTED (in part) to:

- (1) Receive the report of Drs. Weber and Walker as information.
- (2) Approve the request of CACS to grant CSMS funding in the amount of \$6,867 for completion of the Study; notify CACS that no further funds for this purpose will be granted by the Council; and direct that monthly reports be filed with the Council on the progress that has been made toward completing the Study and fulfilling the Society's contractual obligations to same.

Bylaw Amendment re Mandatory Continuing Medical Education

Having been directed by the House of Delegates (11/19/75) to prepare and submit to the next meeting of the House for action the draft of a proposed amendment to Bylaws which would make membership in the Society contingent upon satisfying CME requirements (in accordance with the standards and mechanism for certification of the AMA Physician's Recognition Award), the Council VOTED to request Staff to draft the subject amendment to the Bylaws which, with Council approval, is to be submitted to the House of Delegates at the 1976 annual meeting.

Appointment of Members—Committee on Medical Aspects of Sports

On 11/19/75, the House of Delegates authorized the establishment of a standing Committee on the Medical Aspects of Sports; elected Norman A. Zlotzky, Rockville, as Committee chairman; and directed the Council to appoint the other members of the Committee (limit is 12 including the chairman). The Council VOTED to appoint members as follows: Howard G. Abbot, Rockville; David M. Brody, Norwalk; Richard Campbell-Jacobs, Middletown; Patrick J. Carolan, Bridgeport; Morris A. Granoff, New Haven; Leonard S. Krassner, New Haven; Gerald J. Lawrence, Willimantic; William J. Waskowitz, New Britain; Joseph F. J. Guri, Torrington; Richard J. Cobb, Hartford; Martin L. Karno, New London.

Request for Funding—Student Attendance at National Meetings

The Council considered a request received from a representative of the student body at the Yale School of Medicine that the Society fund the attendance of one student to each of the following national meetings: 72nd Annual Congress on Medical Education, Chicago, 1/30 - 2/1/76; 26th Annual Convention, American Medical Student Association, New Orleans, 3/4 - 7/76. During the discussion of this request, the Associate Dean for Student Affairs at UConn Medical School suggested that two students at the UConn

School might also be granted similar financial support from the Society. With a favorable report by the Fiscal Subcommittee, the Council VOTED to offer to fund roundtrip transportation for one student from each school to attend the meetings as follows:

Congress on Medical Education,
Chicago \$170.00 per student
AMSA Meeting, New Orleans \$230.00 per student

Proposed Changes in Medicaid Program—Governor's Budget Message, 11/25/75

It was VOTED to receive as information with commendation a copy of a letter written by the Executive Director to Governor Grasso, on recommendation of CSMS legislative counsel, which brought to the Governor's attention a number of possible serious consequences that implementation of her proposed changes could have for the underprivileged who count on the Medicaid program for needed health services, and offered cooperation to her and the Commissioner of Social Services in seeking to effect economies in the Medicaid program which would be less drastic in their effects than the changes she has proposed. Also received as information was notice that members of the CSMS Liaison Committee with the Department of Social Services were to meet with Department representatives on December 18 to begin discussion on these matters.

Report—Committee on Hospitals

It was VOTED to refer to the CSMS Section on Obs-Gyn, for study and report to the Council, a matter brought to the Council's attention by the Committee as follows:

"Coverage by CMS for Obstetrical Patients having Tubal Ligations: Hospital association representative described the practice of CMS to pay physicians for the operation only when a separate surgical procedure which is unconnected with the delivery is performed. Such a practice often increases the length of stay of the patient and subjects them to two anesthetics which is considered poor medical practice. It was agreed that this CMS policy does not provide the patient with the maximum possible coverage for her hospitalization and that a possible compromise solution would be the payment of a combined fee which is less than the fee normally paid for delivery plus a separate tubal ligation."

Cumulative Minutes of Committee Meetings

In addition to receiving the cumulative minutes of committee meetings as information, the Council acted

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 Guaifenesin, NF..... 100 mg
 Codeine Phosphate, USP..... 10.0 mg
 (warning: may be habit forming)
 Alcohol, 3.5%

Non narcotic for 6-8-hr. cough control

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 Guaifenesin, NF..... 100 mg
 Dextromethorphan Hydrobromide, NF..... 15 mg
 Alcohol, 1.4%

Decongests nasal passages and sinus openings as it helps relieve coughs

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 Pseudoephedrine** Hydrochloride, NF..... 30 mg
 Alcohol, 1.4%

**Formerly contained Phenylephrine Hydrochloride 10 mg

Decongestant action helps control cough and clear stuffy nose and sinuses. Non narcotic.

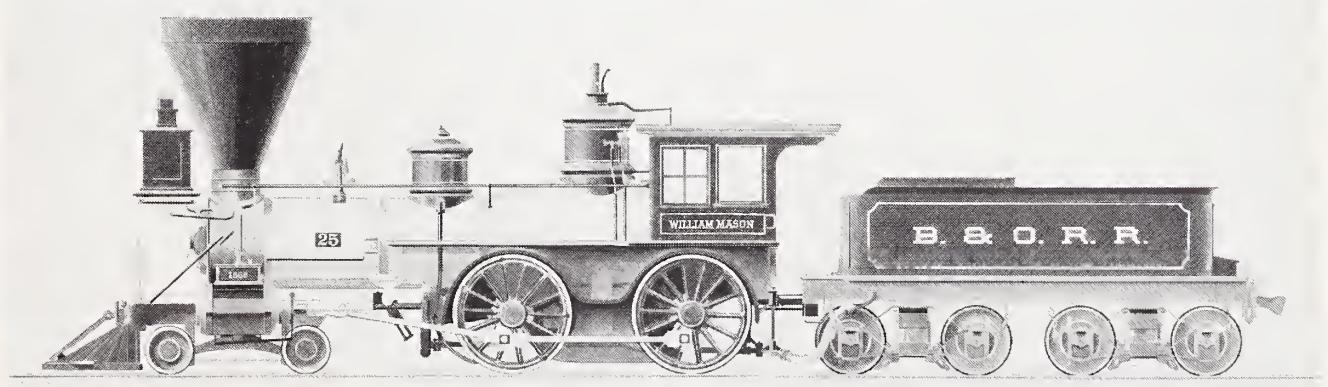
ROBITUSSIN-CF®

Each 5 ml teaspoonful contains:
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The William Mason (1856)

on several matters contained therein as follows:

(a) *Committee on Cooperation with the Medical Schools of Connecticut*: It was VOTED to refer to the Committee on Legislation, for study and report to the Council, the minutes and an attachment to the minutes of the 10/15 meeting of the subject Committee which comprised a recommendation that an amendment be sought to Public Act 75-39—"An Act Concerning Qualifications for License as a Physician in Connecticut"—which would serve to "clear up any ambiguity over the role of the

medical schools (in enabling licensing of a physician) under the "Fifth Pathway Program."

(b) *Committee on Professional Liability*: It was VOTED to refer to the Ad Hoc Committee on Malpractice Insurance Study, for evaluation and possible approval, a recommendation of the Committee on Professional Liability "that the Society retain an impartial insurance consultant to study the feasibility of establishing the Society's own professional liability company."

Summary of Actions

Council Meeting

Thursday, January 8, 1976

The complaint of the Federal Trade Commission against the AMA, the Society and the New Haven County Medical Association, to consider which this Council meeting of 1/8/76 was called, is published in full on pages 101-102 of this issue of the Journal.

I. Attendance

Present in addition to the Chairman, Dr. D.A. Grendon, and the Vice Chairman, Dr. J.K. Freedman, were: Drs. Van Syckle, Spitz, Friedberg, Backhus, Nolan, Root, Jr., Hess, Bradley, Fabro, Ragland, Jr., James, Krinsky, Sonnen, McGarry, Beck, Canzoretti, Robinson, Harkins, Magram, Mendillo and Eslami.

Also present were: Mrs. Lindquist, Mr. Sweeney, Mr. Tomat, Mr. Grant Nickerson (Wiggin and Dana), NHCMA representatives (Drs. Bonner, West, Climo, Pelz, Tierney; Mr. Schuman), Mr. Martel (FCMA) and Dr. Richards.

Absent were: Drs. Johnson, Cramer, Granoff, Kamens, Rubinow, Klare, Barrett, Danbeck and Bird.

Complaints of Federal Trade Commission Against AMA, CSMS and NHCMA

The meeting had been called by the Chairman, Dr. Grendon, for the purpose of apprising the members of the Council of the subject FTC complaints and of calling on the members to determine what course the Society should take in response to such complaints. In brief, it is the contention of the FTC that adherence by AMA, CSMS and NHCMA to the position that it is unethical for a physician to advertise for the purpose of soliciting patients results in (a) the prices of physician services being stabilized, fixed or otherwise interfered with, (b) competition between medical doctors in the provision of such services being hindered, restrained, foreclosed and frustrated, and (c) consumers being deprived of information pertinent to the

selection of a physician and of the benefits of competition. In summary, these allegations have caused the FTC to charge that the AMA, CSMS and NHCMA are acting in violation of the rules of the Commission covering competition and price-fixing.

Mr. Nickerson pointed out the significance of various portions of the FTC document, recounted several conversations he had had with AMA representatives by telephone and reported that he had been asked by AMA to come to Chicago on January 14 to attend a strategy session with AMA legal counsel. He also outlined for the Council members several general courses of action that the Society might follow in responding to the FTC charges.

After a protracted period of discussion and response to questions by Mr. Nickerson, the Council VOTED to adopt a series of motions as follows:

IT IS MOVED: That the Connecticut State Medical Society challenge the complaints of the Federal Trade Commission which relate to the subject of advertising by physicians, and that CSMS legal counsel, accompanied by such other representatives of the Society as the President, in his discretion, may designate, attend the scheduled meeting with AMA representatives in Chicago, 1/14/76, to discuss defense strategy, and to explore (seek to negotiate) with AMA representatives the possibility of the AMA carrying the case forward with the Society standing in support legally and with CSMS legal counsel observing and reporting to CSMS Council at appropriate intervals as to the progress of the case.

IT IS MOVED: That if the New Haven County Medical Association gives CSMS legal counsel written authorization to also represent NHCMA at the 1/14 Chicago meeting with AMA personnel, CSMS legal counsel is authorized to do so at CSMS expense.

IT IS MOVED: That Attorney Grant Nickerson and the New Haven law firm of Wiggin and Dana be authorized to serve as legal counsel for, and representative of, the Society in challenging the

subject complaints of the Federal Trade Commission until such time as the Council shall advise legal counsel that such authorization is terminated or modified.

IT IS MOVED: That, following receipt of Mr. Nickerson's report on the 1/14 Chicago strategy meeting with AMA personnel, the CSMS Executive Director seek to arrange for an AMA representative to meet with the Council in Connecticut, if indicated.

IT IS MOVED: That the President, the Chairman of the Council and the Executive Director be empowered to take any action deemed necessary regarding the Society's challenge of the subject complaints of the Federal Trade Commission, if such action is called for prior to the next meeting of the Council.

IT IS MOVED: That the report of legal counsel on the 1/14 Chicago strategy meeting with AMA personnel, as soon as available, be distributed to all members of the Council and to others concerned.

IT WAS VOTED: That the Editor of the Journal be authorized to publish, without comment, the written complaints of the Federal Trade Commission as received by the Society from FTC.

Further Action on Funding of Ambulatory Care Study

The Council VOTED to receive for filing a copy of a 12/31/75 letter to Frederick C. Weber, Jr., CACS Principal Investigator, from Ms. Ruth L. Riedel, CACS Research Director, in which Ms. Riedel presented a number of reasons why it would be impractical and would create technical problems if the CACS office were to be established in the Society's headquarters building at St. Ronan Street (as directed by the Council on 12/17).

Following discussion of the subject letter, the Council VOTED to exempt Ms. Riedel from complying with the contingency previously imposed on CSMS funding of the Study by the Council (12/17/75) that the CACS office be located at St. Ronan Street. This action also served to make available to CACS Society funds in the amount of \$6,867 to be used to meet the costs of bringing the Study to completion in final form so as to fulfill the Society's contractual obligations to HEW.

N.B.: *The foregoing are summaries of the proceedings and actions of the Council on December 17, 1975 and January 18, 1976. Detailed minutes of these meetings are on file at 160 St. Ronan Street, New Haven, for perusal by any interested member of the Society.*

BOOK REVIEWS

Medical Nemesis; the expropriation of health. Illich, Ivan. Calder and Boyars, London, 1975.

From the first sentence of the introduction ("the medical establishment has become a major threat to health,") this is a disquieting book. Because it represents to the average practitioner a different view of medicine than he customarily takes, it seems worth reviewing at some length.

The title derives from the classical Greek mythology in which Nemesis was a divinity who "represented divine vengeance visited upon mortals who infringe on those prerogatives the gods enviously guard for themselves." Illich feels that the medical establishment by promising health, freedom from pain and postponement of death has called upon itself the wrath of Nemesis.

The first section of the book entitled "Clinical Iatrogenesis" requires no exposition beyond the titles of the sections, as follows:

The epidemic of modern medicine. Doctors effectiveness—an illusion. Useless medical treatment. Doctor inflicted injuries. Defenseless patients.

The second section, "Social Iatrogenesis," starts with "The Medicalization of Life." Here is considered Society's view of medical care—"Total expectations increase faster than resources for care." Further, "all political systems generate the same dependence on physicians, even though capitalism imposes a much higher cost." Dependence on drugs is international. "Doctors are not needed to sponsor addiction to medicine." Society now believes that such natural phenomena as infancy and aging require medical supervision. A particularly searching section deals with "Medicalization of prevention" in which "checkups" and multiphasic health testing seek out early evidence of disease. "The truth is that early diagnosis transforms people who feel healthy into anxious patients." The expectations of the public are constantly raised by reports of "medical break throughs," best "understood as a deep-seated need for miracle cures."

A final diagnosed symptom is the constant increase in patients, those who are excused from some societal role because they are ill. This according to Illich is a by-product of an over-industrialized society in which overproduction of services demands consumers, those who have learned to receive health as a service rather than to maintain health as a personal function.

There have developed various "futile political counter-measures" by which society tries to protect itself against the medical industry. "But the sad truth is that neither control of cost or quality guarantee that health will be served by the activity of doctors."

There follow several more philosophical chapters concerned with coping with and alleviating pain and death. Certainly death is not accepted with the same acquiescence in modern industrial society as it was among our rustic ancestors; it must be prevented or delayed at all costs.

The final section deals with the politics of health. Here Illich considers the many facets of modern society which lead to ill-health; environmental damage, overextension of technologies, lowered levels of nutrition and the ultimate threats of massive destruction by modern weaponry. To combat these evils more medical care is increasingly demanded under "the right to health" banner.

The final section "Hygiene as a virtue" is a somewhat feeble end to some resounding polemics. We should all be hygienic and healthy and have less need for "bureaucratic interference to mate, give birth, share the human condition and die."

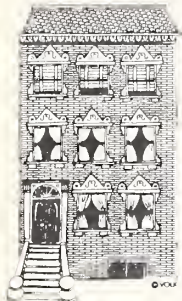
We need this sort of iconoclastic challenge to our generally unchallenged goals, and to help us understand how inevitable are some of our present problems such as malpractice insurance, PSROs and national health insurance.

ROY N. BARNETT, M.D.

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PHYSICIAN PLACEMENT SERVICE

The Society maintains the Physician Placement Service as a service to the medical profession in the State of Connecticut. Opportunities for physicians to locate in Connecticut will be published as space permits and will be distributed to physicians making inquiry of such opportunities. Information should be sent to 160 St. Ronan Street, New Haven, Connecticut 06511, (203-865-6822).

Physicians wishing to establish practice in Connecticut are invited to submit a resume to be kept on file with the Society. An announcement of a physician's availability will be published in two consecutive issues of *Connecticut Medicine*.

PHYSICIANS WISHING TO LOCATE IN CONNECTICUT

Anesthesiology: Wishes to relocate to Connecticut. Roger G. Bucs, M.D., 396 Yorktown Road, Hershey, PA 17033. Tel. (717) 533-4543.

Family Practice: Diplomate, American Board of Internal Medicine. Available in July. Wishes to find opportunity to practice and to do some teaching in an office setting. Harvard Medical School. Residency at Harvard Family Health Care Program. Kenneth R. Dardick, M.D., 193 Penn Lane, Rochester, NY 14625.

Family Practice: 29 yrs. old. Available July 1976. Desires group or associate practice in medium or small community. Presently in practice. Harvard Medical School and University of Penn. Medical Center. Andrew Larkin, M.D., 4535 Larchwood Street, Philadelphia, PA 19143.

Family Practice: Available July 1976. Desires small community in group or associate practice. Graduate of Michigan State. M.D. from Wayne State and residency at Wilmington Medical Center, Delaware. Michael G. Maroldo, M.D., 304 Elsmere Street, Wilmington, DE 19804.

Institutional or Industrial Medicine: Desires position in Central Connecticut. References available. Connecticut license. Contact CSMS.

Institutional or Industrial Medicine: Desires clinic or school or industrial setting. Available on short notice. Connecticut license. Internal Medicine-pathology background. Contact CSMS.

Internal Medicine: Available immediately. Board certified. 28 years old. M.D. from S.U.N.Y. at Buffalo. Residency at Baylor College of Medicine, Houston, Texas. Robert Z. Fialkow, M.D., 2254 Stone Drive, Ann Arbor, MI 48105

Internal Medicine: Board certified. General medicine with subspecialty in rheumatology. Available July 1976. Cornell undergraduate. Downstate Medical School and residency at Strong Memorial in Rochester, NY. 28 years old. Martin W. Isenman, M.D., 758 Elmwood Terrace, Rochester, NY 14620

Internal Medicine: (Cardiology) Fellow at Yale. Completing program in July 1976. Contact CSMS for details.

Internal Medicine: Hematology/Oncology. Presently in practice. Wishes to relocate in Connecticut. Board certified. Columbia undergraduate. M.D. from Duke. Upstate Medical Center in Syracuse. Fellowship at University of Oklahoma. Group or associate practice. Thomas Twele, M.D., E-5 Oxford Towne Apts. New Hartford, NY 13413

Internal Medicine: Cardiology. Available July 1976. Completed Navy training in 1975 at Newport, Rhode Island. Columbia undergraduate. B.U. School of Medicine. Completing fellowship at Mass. General. Prefers southwestern Connecticut. Complete resume on file at CSMS.

OB-GYN: Available July 1976. Board eligible. FLEX. Medium community with group or associate practice. Trained in Peru. Internship and residency at St. John's Hospital in Detroit, Michi-

gan. Frederico G. Rojas, M.D., 10856 Nottingham, Detroit, MI 48224.

Orthopedic Surgery: Available July 1976. 31 years of age. Presently in practice. Wishes to relocate in Connecticut. Board eligible. Desires group or associate practice. M.D. from Albert Einstein College of Medicine. Residency at the same. Herbert I. Hermele, M.D., 632 Rockwood Road, Columbia, 29209.

Orthopedic Surgery: Available in June 1976. Prefers to associate with one or more orthopedists. Presently in U.S. Navy. 32 years old. Board eligible. Brown and Georgetown trained. Detailed resume on file. F.P., M.D., c/o CSMS.

Pediatrics: Board eligible. Available June 1976. Albany Medical College and Duke University Medical Center. Desires group practice near the coast. Richard E. Carroll, M.D., Box No. 3841, Duke Hospital, Durham, NC 27710.

Pediatrics: Available August 1976. Wesleyan; Yale Medical; Fellowship at Rhode Island Hospital. 2 years active duty in the U.S. Navy. Thomas Etkin, M.D., 175 Lloyd Avenue, Providence, RI 02906.

Pediatrics (Neonatology): Available July 1976. Board eligible. FLEX. University of Hong Kong. Presently fellow at Georgetown University Hospital. Taken Part I A.B.P. Raymond K.Y. Chan, M.D., 2911 Dover Lane, Apt. 202, Falls Church VA. 22042.

Pediatrics: Available July 1976. Connecticut license available. Completing residency at St. Francis Hospital in Hartford. Solo or group practice. Yale and UConn trained. Douglas J. Groome, M.D., 133 Woodland Street, Apt. No. 7, Hartford, CT. 06105.

Pediatrics: Available July 1976. Board eligible. Group or associate practice. 28 years old. Roger W. Herman, M.D., 2552 Madison Road, Cincinnati, O. 45208.

Pediatrics: Available July 1976. Completing military service. Board eligible. 29 years old. Prefers group practice in Fairfield County area. Trained at Bellevue and NYU. Jerome H. Isaac, M.D., 2355 W. Michigan Avenue, Pensacola, FL. 32506.

Pediatrics: Available now. Connecticut license. Certified in 1974. Group or associate practice. Trained in India and at the Wesson Women's Hospital in Springfield, Mass. Daniel Israel, M.D., 65 Broad Street, Danielson, CT. 06239.

Pediatrics: Available in July 1976. Boards to be taken in May 1976. 28 years old. Prefers groups practice. Trained at NYU and Childrens Hospital in Los Angeles. Gregory C. Meyer, M.D., 1520 Rodney Drive, Hollywood, CA. 90027.

Pediatrics: Board certified. Solo or group. Available August 1976. Completing active duty. University of Pennsylvania—M.D. and trained at University of Colorado. George M. McCormick, M.D., H-1 Perry Circle, Annapolis, MD. 21402.

Pediatrics: Prefers coastal Connecticut. Ambulatory care program or group or associate practice. Dartmouth and Harvard trained. Available with 2 or 3 months notice. Board certified. 44 years old. Write CSMS—M.H.M.

Pediatrics: Available July 1976. Interested in pediatric allergy. Board certified. 32 years old. Presently in Air Force. Has spent most

of his life in New England and wishes to return east to establish practice. Peter A. Nickles, M.D., 955 Channel Court, Concord, CA. 94518.

Pediatrics: Available August 1976. Interested in group practice. Has special training in behavioral pediatrics. Wishes opportunity to work with children and adolescents having behavior problems. Passed Part I of Pediatric Boards in 1974. Greg Prazar, M.D., 5304 Lantern Court, Baltimore, MD. 21229.

Pediatrics: Available July 1976. Completing fellowship at Albert Einstein College of Medicine. Board certified. Trained in general and acute pediatrics as well as developmental medicine (cerebral palsy, mental retardation, learning disabilities, hearing deficits, speech and language disorders). 33 years of age. Completed military service. Irwin L. Schwartz, M.D., 1925 Eastchester Road, Apt. 19A, Bronx, NY. 10461.

Pediatrics: Available summer of 1976. Board eligible. Group or associate practice. Trained at Yale and University of Florida. Carl D. Sorgen, M.D., 3301 S.W., 13 Street, Apt. A 103, Gainesville, FL. 32608.

Psychiatry: Available July 1976. Board eligible. 31 years old. Presently at Cornell Medical Center. Wife is a Board certified Radiologist. Both wish to practice in same area. Bruce M. Smoller, M.D., 435 E. 70th Street, Apt. 10J, NY. 10021.

Radiology: Available July 1976. Passed Part I for certification. FLEX. Presently at Bronx-Lebanon Hospital as a fellow. Pramod Digamber, M.D., 2451 Webb Avenue, Bronx, NY. 10468.

Radiology: Board certified in Radiology and Nuclear Medicine. Available with 30 day notice. 43 years old. Served in USAF. Special training in Angiography. Lionel D. Ginsburg, M.D., 1250 Los Altos, Long Beach, CA. 90815.

Radiology (Diagnostic): Available July 1976. Passed Part I of American Board of Radiology. Special training in Angiography and Ultrasonography. Resume on file at CSMS.

Radiology: Available July 1976. Board certified. Husband is psychiatrist. Both Cornell trained. Cosette N. Smoller, M.D., 435 E. 70th Street, Apt. 10J, New York, NY. 10021.

Radiology (Diagnostic): Board certified. Presently in practice, but wishes to relocate in Connecticut. Special training in "dry" nuclear medicine and abdominal-obstetrical ultrasound. S.D. Weisbaum, M.D., 364 Glengarry Avenue, Beaconfield, P.Q. H9W1A1, Canada.

Internal Medicine (Rheumatology): Available July 1976. 31 years old. Completed active duty in U.S. Navy. Board certified. Desires to associate with group and/or another rheumatologist. Resume on file at CSMS. R.S.K.

Internal Medicine (Pulmonary Diseases): Presently available. Completed fellowship at University of Cincinnati. 32 years old. Board eligible. Harris Museser, M.D., 2275 Winter Parkway, Suite 168, Cuyahoga Falls, O. 44223.

Internal Medicine: Certified ABIM. Available July 1976. Completing active duty in U.S. Army. Interested in small group practice. Cornelius J.P. Sullivan, M.D., 3814 Cadillac Lane, Tacoma, WA. 98499.

Internal Medicine (Nephrology): Board eligible. Associate or institutional practice desired. Available July 1976. Presently completing fellowship at Cleveland Clinic Foundation. 30 years old. M.D. from University of Ottawa. Pierre Berthiaume, M.D., 3423 Elmwood, Cuyahoga Falls, O. 44221.

Internal Medicine (Cardiology): Presently in practice. Wishes to relocate in Connecticut. Board eligible. 51 years old. Special interest in preventive cardiology. Oliver B. Bond, M.D., P.O. Box 5502, Towson, MD. 21204.

Internal Medicine (Gastroenterology): Certified by ABIM. FLEX. Completing fellowship at Massachusetts General. Available July 1976. Resume on file at CSMS. M.F., M.D.

Anesthesiology: Board eligible. Available July 1976. Completing residency at Bronx Municipal Hospital, N.Y. License. Taiwan University Medical School. Li-Cheng Yeh, M.D., 3990 Bronx Blvd., No. 6D, Bronx, NY. 10466.

OPPORTUNITIES FOR PRACTICE

(If no name is listed, contact the Physician Placement Service for more details.)

Family Practice: Town of Bolton, Conn., needs a practitioner. Contact CSMS.

Family Practice: Middlesex County. Excellent opportunity to assume practice. Affiliated with Middlesex Memorial Hospital a few miles away.

Emergency Room Positions: Contact EMS Department: Middlesex Memorial Hospital, Middletown; Milford Hospital, Milford; World War II Memorial Hospital, Meriden; Wesson Emergency Associates, Springfield, Mass.; Meriden-Wallingford Hospital, Meriden; Charlotte Hungerford Hospital, Torrington.

Anesthesiology: Apply to Daniel Weaver, M.D., Bradley Memorial Hospital, Southington, CT. 06489.

Anesthesiology: Board qualified or certified Anesthesiologist for full time position in 350 bed general hospital affiliated with the University of Connecticut Medical School and located in central Connecticut. Professional corporation group practice. Send resume to M.S.H. c/o CSMS.

Family Practice: Several new listings. Information available at CSMS.

OB/GYN: Opportunities in New Milford, Waterbury and Torrington. Contact CSMS for details.

Pediatrics: New listings for opportunities in Meriden (group practice) and in Enfield. Contact CSMS.

Primary Physician: Individuals in Madison wish to attract a new physician to the area. Details from CSMS Physician Placement Service.

Vice President for Medical Affairs: Full time post. Requires background in clinical medicine, administration and medical education. Affiliations with Yale University School of Medicine and the New York Medical College. Details available from John C. Daniels, M.D., Chairman, Search Committee, Danbury Hospital, Danbury, CT. 06810.

Unusual Opportunity: Physician wishes to cut down his activities to one day a week. Will offer use of his office, completely equipped, including x-ray equipment, etc., to any interested licensed M.D. First floor location, with ample parking, near St. Francis Hospital in Hartford. Write Unusual Opportunity c/o CSMS.

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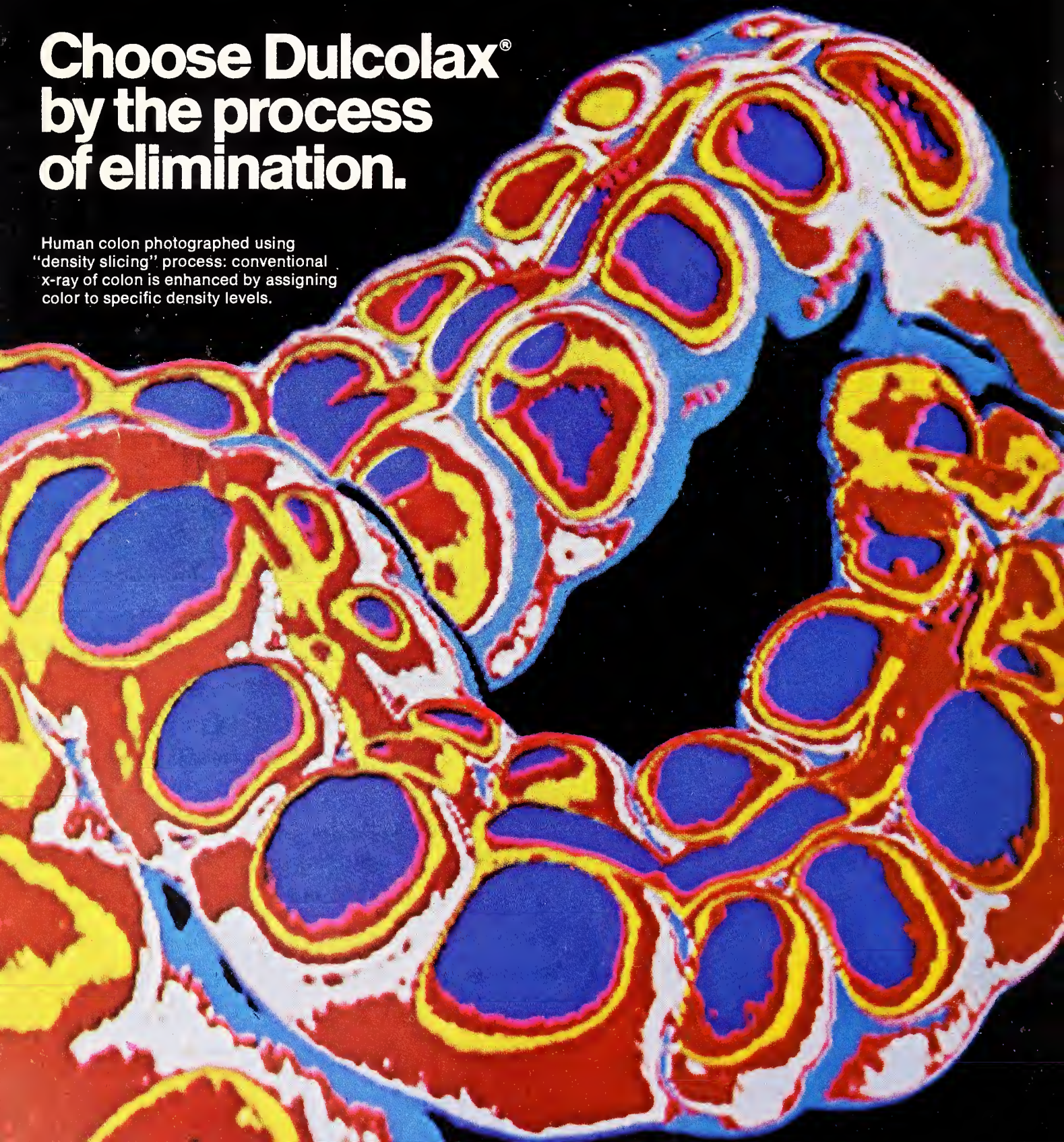


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General Principles of Cancer Chemotherapy

Lawrence H. Einhorn, M.D.

ABSTRACT—A broad background for the use of cancer chemotherapy has been presented. These drugs are classified, according to their mechanism of action, as alkylators, antimetabolites, antibiotics, alkaloids (antimitotics), or hormones. In addition, there are some agents which do not conveniently fit into any of these categories. The rationale behind combination chemotherapy and examples of combination chemotherapy have been discussed.

Cancer is the second leading cause of death, accounting for approximately 350,000 deaths per year. In the past few years, there has been an increasing awareness of the value of cancer chemotherapy. The role of a medical oncologist in a community is rapidly becoming invaluable; however, at the present time, many medical communities do not have any physician trained in the administration of cancer chemotherapy. Indeed, many internists and family practice physicians are obliged to initiate cancer chemotherapy in their patients even though they are unfamiliar with the drugs they are using. Also, there is now an increasing public awareness of the merits of cancer chemotherapy, whether for palliation or for definite prolongation of survival. It is the purpose of this paper to give a general introduction to the indications for cancer chemotherapy and the adverse effects associated with the individual drugs.

The physician employing cancer chemotherapeutic drugs for patients with malignant diseases must have a concept of what his goal is in any individual patient. In certain diseases, the goal is cure, and in others the goal is prolongation of survival, and still others (such as squamous cell carcinoma of the head and neck, or enteric adenocarcinoma), the best the physician can hope for is to achieve palliation. Certainly, the physician is considerably more likely to continue a particular drug regimen, even in the face of drug toxicity, if there is a realistic prospect for cure or significant prolongation of survival, whereas if the goal is mainly palliation, it would be difficult to justify severe drug-related toxicity. A good example of this concept is Oncovin (Vincristine), a commonly employed cancer chemotherapeutic agent with neuromuscular toxicity as its predominant side effect. This drug, when

combined with Prednisone, has almost 100% probability of inducing a complete remission in childhood leukemia, and a significant amount of neuromuscular toxicity will be tolerated before discontinuing this drug. On the other hand, if this drug were used in diseases such as lung cancer, the same amount of neuromuscular toxicity would probably not be tolerated by the physician or the patient, and the drug would be discontinued at an earlier time.

Partial responses (P.R.) in chemotherapy refer to a greater than 50% reduction in the sum of the perpendicular diameters of measurable disease for at least one month. A complete remission (C.R.) is defined as a complete disappearance of all signs and symptoms of disease. Obviously, complete remissions are not synonymous with cure, as many C.R.'s have micrometastases not grossly detectable, and perhaps due to the development of drug-resistant clones of malignant cells, eventually become clinically apparent recurrent disease. Certainly this same situation also applies to cancer surgery, as many times the surgeon removes all gross disease ("C.R.") only to have recurrent disease develop. Our general policy for patients achieving drug-induced complete remissions is to continue the chemotherapy for 2 years from the time the patient achieved C.R., and then discontinue all therapy.

Chemotherapy "Cures"

It is distinctively unusual to speak of a cure induced by chemotherapy; instead, the terms "long remission" or "prolongation of survival" are usually employed. However, with certain diseases such as disseminated choriocarcinoma (in the female only; in the male, choriocarcinoma remains a highly lethal disease), cure is definitely a reality.¹ In recent years, encouraging reports are appearing that indicate that unquestionable prolongation of survival is occurring and cure may be possible in the diseases listed in Table 1.

TABLE 1
DISSEMINATED MALIGNANCIES THAT ARE
POTENTIALLY CURATIVE

- | |
|--|
| 1. Choriocarcinoma |
| 2. Wilms' tumor |
| 3. Neuroblastoma |
| 4. Acute lymphoblastic leukemia |
| 5. Hodgkin's disease, Stage III and IV |
| 6. Burkitt's lymphoma |
| 7. Testicular carcinoma |
| 8. Soft tissue sarcomas |
| 9. Non-Hodgkin's lymphoma |

With the exception of soft tissue sarcomas, these are all rapidly growing tumors which have a high

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proportion of cells in mitosis or undergoing DNA or protein synthesis. Some of the cancer chemotherapeutic agents such as the antimetabolites act only during these stages of the cell cycle. Thus, these tumor cells will be vulnerable to the effects of these antineoplastic agents more often than cells which divide slowly. Most of the solid tumors (breast, lung, colon, pancreas, etc.) are examples of slow growing tumors, whereas most of the hematological tumors and germinal cell tumors are examples of rapidly growing tumors.

One of the most impressive achievements with cancer chemotherapy has been the treatment of trophoblastic tumors in women. Prior to the use of chemotherapy, the five-year survival for choriocarcinoma in the female in the presence of metastases was 19%. Excellent results have been obtained using either Methotrexate² or Actinomycin-D³. One major reason for the unusual sensitivity of this tumor to chemotherapeutic agents is that it is the equivalent of a transplanted tumor in a human, i.e., the tumor is of placental origin, and transplanted tumors in animals are considerably more susceptible to chemotherapy than are spontaneous tumors.

Other examples of potential curative chemotherapy of disseminated malignant disease are listed in Table 1. Actinomycin-D as an adjuvant to radiotherapy for metastatic Wilms' tumor has been highly successful.⁴ Even in the presence of pulmonary metastases, there is a 50-75% cure rate.

The use of Cytosan and Oncovin in neuroblastoma has produced a small number of five-year survivors with metastatic disease⁵ and the recent addition of Adriamycin has significantly increased the C.R. rate and hopefully will improve survival and potential cure.⁶

St. Jude's Hospital has reported a 17% five-year survival rate for acute lymphoblastic leukemia in children for a regimen used in the mid and late 1960s.⁷ Their current regimen has a projected 50% five-year survival.⁸ Before the use of chemotherapy, the five-year survival was less than 1%.

Combination chemotherapy (MOPP) (Nitrogen mustard, Oncovin, Prednisone, and Procarbazine) has drastically altered the prognosis in Stage III and IV Hodgkin's disease,⁹ and there is now a significant proportion of patients who have remained in their original complete remission for periods of 5 to 10 years.¹⁰ Further improvement in the MOPP regimen has been produced by adding Bleomycin to MOPP and the C.R. rate for previously untreated patients with Stage III or Stage IV Hodgkin's disease is now 90%.¹¹ This type of data for the radiotherapeutic treatment of Hodgkin's disease would be considered tantamount to a cure. Only time will tell whether these patients are actually "cured" of far-advanced Hodgkin's disease.

Burkitt's lymphoma is rare in the United States, although it is relatively common in certain geographical areas of Africa. This tumor is highly sensitive to Cytosan.¹²

In 1960, Dr. Li reported on the use of combination chemotherapy (Leukeran, Actinomycin-D, and Methotrexate) for the treatment of disseminated testicular tumors. Although the number is small, there have been five-year survivors with this regimen.¹³ More recently, very impressive complete remissions have been attained with Velban + Bleomycin (13 of 20 C.R.'s).¹⁴ Although the followup period is short for this 2 drug regimen, it is highly probable that we will be able to dramatically improve the cure rate in this disease as approximately half of the Actinomycin-D C.R.'s (alone or combined with Leukeran and Methotrexate) have resulted in permanent cure.

Soft tissue sarcomas have been among the most chemoresistant of all malignancies, prior to the advent of Adriamycin. However, present regimens utilizing Adriamycin in combination chemotherapy have produced response rates (P.R. + C.R.) ranging up to 60%, including 10-15% C.R.¹⁵ It is very encouraging to note that the great majority of these C.R.'s have remained in C.R. for periods up to 4 years.

Combination chemotherapy with MOPP or COP (Cytosan, Oncovin, and Prednisone) for non-Hodgkin's lymphoma has significantly improved the C.R. rate and improved survival. Diffuse histiocytic lymphoma (reticulum cell sarcoma) has clearly been shown to be potentially curative, with 11 of 27 (41%) patients achieving C.R. and with follow-up periods of 6 to 10 years, 10 of these 11 patients have remained in C.R.¹⁶ It is noteworthy that diffuse histiocytic lymphoma is generally regarded as the lymphoma with the worse prognosis.

Contraindications

There are several contraindications to cancer chemotherapy, and these are listed in Table 2. These drugs all depress host defense mechanisms because they are immunosuppressive and they do lower the white blood count due to their myelosuppressive effect. These agents quite obviously do not promote wound healing, and thus they are relatively contraindicated during an infection or immediately following surgery. Generally speaking, we tend to treat any underlying sepsis prior to the initiation of chemotherapy. We tend to wait about 5-7 days post-operatively until the incision is adequately healed before initiating chemotherapy.

Most of these agents are metabolized by the liver and excreted by the kidneys. Generally speaking, the dosage of the cancer chemotherapy drugs is not altered materially, although Methotrexate is generally

TABLE 2
CONTRAINDICATIONS TO CHEMOTHERAPY

1. Infection
2. Recent surgical procedure
3. Impaired hepatic or renal function
4. Recent radiotherapy
5. Pregnancy (especially 1st trimester)
6. Bone marrow depression

avoided in the presence of renal impairment, since the drug is rapidly excreted by the kidneys and the dosage of Adriamycin is halved if the serum bilirubin is greater than 2.0 mg%.¹⁷

Almost all cancer chemotherapy agents are myelosuppressive. If a patient has received radiotherapy to a marrow-producing area, no chemotherapy should be given for a period of four weeks, as there is often a lag until the myelosuppressive effect of radiotherapy becomes manifest, and an additive myelosuppressive effect could be encountered.

Virtually all antineoplastic drugs have been shown to be teratogenic in animals. This is a real risk which must be weighed before initiating or continuing chemotherapy in a pregnant patient. These drugs are especially hazardous during the first trimester.

Again, since most of these agents are myelosuppressive, the dosage of these drugs must be altered in the presence of marrow suppression. The dosage reduction is individualized, but generally, if the WBC is 3,000-4,000, the dosage is halved, and if the WBC is 2,000-3,000, only one-quarter dosage is given, or therapy is delayed until the blood counts recover.

Classification

Drugs used against cancer are classified as to the mechanism of action of the compound. The types of agents available in the oncologist's armamentarium are listed in Table 3.

TABLE 3
CLASSIFICATION OF CHEMOTHERAPEUTIC AGENTS

Alkylating agents
Antimetabolites
Antibiotics
Alkaloids (antimitotics)
Hormones
Miscellaneous agents

Alkylating Agents

The initiation of cancer chemotherapy began with the use of nitrogen mustard. Mustard gas was used for chemical warfare, and in Flanders during World War I., there were thousands of casualties from this agent. It was observed that this agent caused a dissolution of lymphatic tissue and damage to the bone marrow. However, in the late 1930s and 1940s, this agent was classified as "top secret" and it was not until 1942 that

this antineoplastic agent was used for the first time on a human subject, and thus the field of cancer chemotherapy was born.¹⁷ The first patient to be treated was a radio-resistant patient in the terminal stages of lymphosarcoma. It is of interest to note that on this patient's chart, there was an entry which read "0.1 mg/kg compound X given intravenously" because the nitrogen mustards were still classified as "top secret" at the time.

Over 3,000 alkylators have been synthesized, but less than a dozen of these have any clinical applicability. These agents all share the following characteristics:

TABLE 4
MOPP

Mustard—6 mg/M ² I.V., day 1 and 8
Oncovin—1.4 mg/M ² I.V., 1 and 8 (maximal dosage of 2.0 mg at one time)
Prednisone—40 mg/M ² P.O. x 14 days (1st and 4th courses only)
Procarbazine—100 mg/M ² P.O. x 14 days
Bleomycin 5 units I.V. day 1 and 8
6 courses given at monthly intervals. If a complete remission is obtained, maintenance MOPP chemotherapy (without Bleomycin) given for 9 more courses every other month.

1. Act by substituting an alkyl group for hydrogen ion on guanine nucleotide of DNA, i.e., they alkylate DNA and inhibit cell growth and proliferation.¹⁹
2. These agents are effective throughout the cell cycle.
3. Act rapidly—should see tumor shrinkage in a day or two with I.V. alkylators such as nitrogen mustard.
4. These agents can be used for rapid immunosuppression, e.g., Cytoxan in lupus nephritis or rheumatoid arthritis.
5. All these agents are potentially mutagenic, teratogenic, and carcinogenic.
6. Generally speaking, if one alkylator isn't effective on an individual patient, other alkylators will also be ineffective. A possible exception to this rule is the use of Cytoxan for Alkeran-resistant myeloma patients.

The following alkylating agents are of clinical use:

I. NITROGEN MUSTARD (MUSTARGEN)

A. Antineoplastic Spectrum

- (1) Lymphomas
- (2) Cancer of lung, breast, ovary
- (3) Malignant effusions—For malignant pleural effusions, the patient should be tapped dry as possible and 0.4 mg/kg of mustard instilled into the pleural space. This will cause the similar systemic effects as intravenous nitrogen mustard.²⁰
- (4) Superior vena cava obstruction
- (5) Spinal cord compression

B. Toxicity

- (1) Bone marrow depression—occurs maximally 7-10 days after administration.
- (2) Nausea and vomiting 30-60 minutes after administration; we prefer 10 mg. Compazine I.V. just prior to injection as antiemetic.
- (3) Vesicant material—should be injected into rubber tubing of running I.V.

C. Dosage

- (1) Supplied in 10 mg. vials
- (2) Major usage of nitrogen mustard today is as a part of combination chemotherapy (MOPP)⁹ for far-advanced Hodgkin's disease. Dosage for this is 6 mg/M².
- (3) If used alone, 0.4 mg/kg I.V. as a single dose.
- (4) Must be given shortly after it is put into solution because the compound is unstable.

II. THIO-TEPA

A. Antineoplastic Spectrum

- (1) Same as nitrogen mustard

B. Toxicity

- (1) Same as nitrogen mustard, but has less vesicant action.

C. Dosage

- (1) 0.6-0.8 mg/kg I.V. or I.M., then 10 mg. every week.

III. BUSULFAN (MYLERAN)

A. Antineoplastic Spectrum

- (1) Treatment of choice for chronic granulocytic leukemia²¹

B. Toxicity

- (1) Bone marrow depression
- (2) Nausea and vomiting
- (3) Hyperpigmentation with Addisonian-like syndrome
- (4) Gynecomastia
- (5) Amenorrhea
- (6) Pulmonary fibrosis

C. Dosage

- (1) Supplied as 2 mg. tablets
- (2) For CGL, start therapy at 4-6 mg/day until WBC is 10,000-20,000. At this point Myleran should be *discontinued* until WBC is again rising, and then patient placed on maintenance therapy (individually titrated to keep WBC 10,000-20,000, usually 2 mg/day). This drug can cause severe and irreversible myelosuppression.

IV. CHLORAMBUCIL (LEUKERAN)

A. Antineoplastic Spectrum

- (1) Treatment of choice for chronic lymphocytic leukemia²²
- (2) Lymphomas
- (3) Cancer of breast, ovary,²³ and testes²⁴

B. Toxicity

- (1) Bone marrow depression
- (2) Nausea and vomiting

C. Dosage

- (1) Supplied as 2 mg. tablets
- (2) 0.1-0.2 mg/kg/day initially until maximal effect achieved (usually 3-6 weeks)—2 mg/day maintenance.

V. MELPHALAN (ALKERAN)—Phenylalanine mustard

A. Antineoplastic Spectrum

- (1) Multiple myeloma²⁵
- (2) Cancer of ovary

B. Toxicity

- (1) Bone marrow depression
- (2) Nausea and vomiting

C. Dosage

- (1) For multiple myeloma—6 mg/day for 2-3 weeks, then 1-3 mg/day maintenance.
- (2) Best regimen for myeloma appears to be intermittent combination chemotherapy with Prednisone.²⁶

VI. CYCLOPHOSPHAMIDE (CYTOXAN)

A. Antineoplastic Spectrum

- (1) Most widely used oral alkylator
- (2) Multiple myeloma²⁷
- (3) Lymphomas
- (4) Chronic lymphocytic leukemia
- (5) Acute lymphocytic leukemia
- (6) Cancer of breast,²⁸ lung²⁹
- (7) Soft tissue sarcoma
- (8) Neuroblastoma

B. Toxicity

- (1) Bone marrow depression
- (2) Nausea and vomiting
- (3) Alopecia
- (4) Hemorrhagic cystitis—starts as increased frequency and dysuria; can be very severe.

C. Dosage

- (1) Supplied as 50 mg. tablets
- (2) Supplied as 100, 200, or 500 mg. vials
- (3) Dosage variable according to disease being treated—usually 2 mg/kg/day orally: Probably best to give as high dose intermittent therapy.

Antimetabolites

These agents are competitive inhibitors with normal metabolites for particular enzymes. They inhibit DNA synthesis and interfere with de novo synthesis of nucleic acids. These drugs act considerably slower than alkylators, and it is usually 4-8 weeks until tumor shrinkage is observed.

I. AMETHOPTERIN (METHOTREXATE)—folic acid inhibitor; inhibits dihydro-folate reductase³⁰

A. Antineoplastic Spectrum

- (1) Choriocarcinoma
- (2) Acute lymphoblastic leukemia.
- (3) Epidermoid carcinoma^{31 32}
- (4) Meningeal leukemia—intrathecal³³

B. Toxicity

- (1) Bone marrow depression
- (2) Oral ulcerations, nausea, vomiting, diarrhea
- (3) Acne
- (4) Cirrhosis
- (5) Pneumonitis ("Methotrexate lung")³⁴
- (6) Relatively contraindicated in presence of impaired renal function

C. Dosage

- (1) Can be given orally or parenterally
- (2) Dosage variable according to disease state

II. 5-FU (FLUOROURACIL)—inhibits thymidylate synthetase; pyrimidine antagonists³⁵

A. Antineoplastic Spectrum

- (1) Adenocarcinoma (rectum, colon, pancreas, stomach, breast).

B. Toxicity

- (1) Bone marrow depression
- (2) Nausea, vomiting, oral ulcerations, bloody diarrhea

C. Dosage

- (1) Supplied as 500 mg. vials
- (2) No need to give a "loading dose"³⁶
- (3) No need to "push to toxicity" to get clinical response
- (4) Oral form^{37 38} (same dosage)—vial poured directly into orange juice
- (5) 10-15 mg/kg I.V. once a week
- (6) Treat for minimum of 8 weeks—if no response, discontinue; if patient responds, continue weekly 5-FU until relapse.
- (7) This drug is primarily used for palliation alone in adenocarcinomas.

III. 6-MERCAPTOPURINE (PURINETHOL)—Purine antagonist

A. Antineoplastic Spectrum

- (1) Acute leukemia

B. Toxicity

- (1) Bone marrow depression
- (2) Hepatotoxicity³⁹
- (3) Nausea and vomiting

C. Dosage

- (1) 50 mg. tablets
- (2) 2.5 mg/kg every day
- (3) Must decrease 6-MP to 25% of usual dosage if Allopurinol given concomitantly, because Allopurinol is a xanthine oxidase inhibitor and blocks the degradation of 6-MP to 6-thiouric acid.

IV. 6-THIOGUANINE

A. Antineoplastic Spectrum

- (1) Acute myeloblastic and monoblastic leukemia

B. Toxicity.

- (1) Bone marrow depression

C. Dosage

- (1) Supplied as 40 mg. tablets
- (2) No need to alter dosage with Allopurinol.
- (3) 2.0-2.5 mg/kg/day

V. CYTOSINE ARABINOSIDE (CYSTOSAR)—cytidine analog; inhibits DNA polymerase

A. Antineoplastic Spectrum

- (1) Acute leukemia

B. Toxicity

- (1) Severe bone marrow suppression
- (2) Nausea and vomiting

C. Dosage

- (1) 100-200 mg/M² as 24-hour infusion for 5 consecutive days (if used alone)⁴⁰
- (2) Best used in combinations.^{41 42 43}
- (3) Used in low dosage (10-20 mg/M² as 24-hour I.V. infusion for 3-5 days) for herpes zoster⁴⁴ although it is controversial whether this drug has efficacy here.

Antibiotics

I. ACTINOMYCIN-D (COSMAGEN)

A. Antineoplastic Spectrum

- (1) Wilms' tumor⁴—especially effective as adjuvant to radiotherapy.
- (2) Choriocarcinoma³
- (3) Germinal cell neoplasma¹³
- (4) Soft tissue sarcomas

B. Toxicity

- (1) Bone marrow depression—may cause thrombocytopenia before leukopenia.

- (2) Nausea and vomiting
- (3) Skin eruptions
- (4) Oral ulcerations
- (5) Renal and hepatic toxicity

C. Dosage

- (1) Supplied in 500 mg. vials
- (2) Dosage varies according to disease being treated; usual dosage 10 mg/kg I.V. push for 5 consecutive days, then repeat every month.

II. MITHRAMYCIN

A. Antineoplastic Spectrum

- (1) Testicular tumors—especially embryonal carcinoma⁴⁵
- (2) Malignant hypercalcemia—highly effective; should be used only for very severe or refractory hypercalcemia; probably has calcitonin-like effect.⁴⁶

B. Toxicity

- (1) Bone marrow depression
- (2) Nausea and vomiting
- (3) Hypocalcemia
- (4) Coagulopathies—primary toxicity
- (5) Hepatotoxicity

C. Dosage

- (1) 50 mgm/kg IV q.o.d. for 5 dosages monthly x 6.

III DAUNOMYCIN* (RUBIDOMYCIN) (DAUNOMYCIN)

A. Antineoplastic Spectrum

- (1) Acute leukemia^{47 48}

B. Toxicity

- (1) Severe myelosuppression—causes marrow aplasia.
- (2) Cardiac toxicity—refractory congestive heart failure, especially in older patients.
- (3) Vesicant—must be injected into rubber tubing of running I.V.

C. Dosage

- (1) Total dosage should not exceed 550 mg/M²; cardiac toxicity is cumulative.
- (2) Optimal dosage schedule not established.
- (3) This drug is very toxic and often causes marrow aplasia; however, it has been a highly effective drug for resistant leukemia.
- (4) Drug also highly effective for acute myeloblastic⁴⁷ and monoblastic leukemia, especially in combination with other antineoplastic agents.

IV. ADRIAMYCIN—hydroxymethyl analog of Daunomycin⁴⁹

Adriamycin is unquestionably one of the most effective cancer chemotherapeutic agents available.⁵⁰ As previously mentioned, this drug has drastically changed the prospects for patients with disseminated soft-tissue sarcomas,¹⁵ and because of its high degree of activity in this setting, it is now also being used as adjuvant therapy in osteogenic sarcoma following amputation. It is clearly the most effective single agent in thyroid⁵⁰ and breast cancer,⁵⁰ and is as active as any agent in malignant lymphomas.⁵¹ However, one major problem with this drug, like the other anthracycline compound Daunomycin, is its dose-limiting cardiotoxicity, causing cessation of the drug at a total dosage of 550 mg/M².⁵² Thus many patients who achieve excellent P.R.'s on Adriamycin have relapses shortly after stopping the Adriamycin at 550 mg/M².

A. Antineoplastic Spectrum

- (1) Lymphomas
- (2) Soft tissue sarcomas
- (3) Thyroid cancer
- (4) Breast cancer
- (5) Cancer of bladder
- (6) Cancer of prostate
- (7) Acute leukemia
- (8) Lung cancer

B. Toxicity

- (1) Bone marrow suppression
- (2) Cardiac Toxicity—congestive heart failure—dose limited (550 mg/M²)
- (3) Mucositis
- (4) Alopecia—virtually 100% of patients affected

C. Dosage

- (1) 60-75 mg/M² I.V.—repeat every 3 weeks

V. BLEOMYCIN (Blenoxane)—Japanese antibiotic derived from streptomyces verticillus⁵⁴

A. Antineoplastic Spectrum

- (1) Epidermoid carcinoma—head and neck, vaginal and anal, CA of penis
- (2) Testicular tumors¹⁴
- (3) Hodgkin's disease⁵⁵—this drug can be given to a patient with Hodgkin's disease who fails to respond to MOPP combination chemotherapy and has significant myelosuppression, because this drug has no myelosuppression.

B. Toxicity

- (1) Fever and chills
- (2) Skin changes—hyperpigmentation
- (3) Major toxicity pulmonary fibrosis which can be fatal; cumulative effect; limit total dosage to 400 mg.

*Investigational drug

- C. Dosage
 - (1) 30 units IV once or twice a week

VI. STREPTOZOTOCIN*

- A. Antineoplastic Spectrum
 - (1) Carcinoid.
 - (2) Islet-cell tumor⁵⁶
- B. Toxicity
 - (1) Diabetes
 - (2) Nephrotoxicity
 - (3) Immediate nausea and vomiting
- C. Dosage
 - (1) 1.0 gm IV once weekly—escalate by 1.0 gm/week x 4 weeks.

Vinca Alkaloids⁵⁷

There are only two clinically useful drugs in this category—Oncovin and Velban. Although they are both derived from the periwinkle plant and they both are stathmokinetic agents (cause a metaphase arrest), they have a completely different clinical spectrum and toxicity.⁵⁸ These agents have a definite platelet-sparing effect; in fact, they have even been tried in the therapy of idiopathic thrombocytopenic purpura.

I. VINBLASTINE (VELBAN)

- A. Antineoplastic Spectrum
 - (1) Lymphomas⁵⁹
 - (2) Acute monoblastic leukemia
 - (3) Testicular tumors^{60 14}
 - Cancer of breast⁶¹
- B. Toxicity
 - (1) Bone marrow depression
 - (2) Nausea and vomiting
 - (3) Neuromuscular toxicity—in high dosage
- C. Dosage
 - (1) 0.1 mg/kg I.V. push once a week—
increase by 0.05 mg/kg I.V. each week
until toxicity usually 0.3-0.4 mg/kg).

II. VINCRISTINE (ONCOVIN)

- A. Antineoplastic Spectrum
 - (1) Lymphomas
 - (2) Leukemias
 - (3) Solid tumors—in combination with other anti-neoplastic agents
- B. Toxicity
 - (1) Minimal bone marrow depression
 - (2) Neuromuscular toxicity—first see diminution of DTR⁶² and paresthesias of fingertips. Should lower dosage of discontinue if:
 - a. paresthesias severe

- b. grips markedly weakened or
interossei muscles weak
- c. severe constipation
- d. impaired extra-ocular movements
- e. cerebellar signs—positive Romberg
- f. any evidence of foot drop
- g. severe muscle weakness
- (3) Toxicity cumulative; neuromuscular toxicity commoner and more severe in older patients
- (4) Alopecia
- C. Dosage
 - (1) In older patient, give prophylactic stool softener.
 - (2) Usually used in combination—excellent for combination because it has minimal marrow suppression.
 - (3) Usually, maximal dosage at one time for adult is 2.0 mg.; maximal dosage for patient 65 years or older is 1.0 mg.

Hormones

- (1) Testosterone⁶³—pre-menopausal breast cancer, after response to oophorectomy and/or adrenalectomy
- (2) Estrogen—disseminated carcinoma of prostate and post-menopausal breast cancer⁶⁴
- (3) Progesterone—cancer of breast,⁶⁵ hypernephroma,⁶⁶ and endometrial carcinoma

It should be kept in mind that, in addition to the common virilizing side effects of testosterone and the nausea, vomiting, breast engorgement, and salt and fluid retention of estrogens, these agents can also cause hypercalcemia.

Prednisone is an adrenocortical steroid that has applicability in cancer chemotherapy. It causes atrophy of lymphoid tissue and a lymphopenia, and is useful in the management of lymphomas and lymphocytic leukemia, as well as having some degree of activity in breast cancer.

Miscellaneous Agents

I. PROCARBAZINE (MATULANE)— methylhydrazine derivative

- A. Antineoplastic Spectrum
 - (1) Lymphomas, especially Hodgkin's
 - (2) Bronchogenic carcinoma
- B. Toxicity
 - (1) Bone marrow depression
 - (2) Nausea, vomiting
 - (3) Lethargy
- C. Dosage
 - (1) Supplied as 50 mg. tablets

*Investigational drug

- (2) 100 mg/M² orally for 14 consecutive days
"MOPP" dosage

II. Nitrosoureas*—Unique compounds because of delayed myelosuppression; drugs effect stem cell population of marrow and cause maximal myelosuppression 4-6 weeks after administration. Myelosuppression tends to be cumulative, especially thrombocytopenia. Only other toxicity is nausea, vomiting, and (rarely) hepatotoxicity. These drugs are highly lipid-soluble and therefore have excellent penetration through the blood-brain barrier.

A. BCNU—intravenous preparation

(1) Antineoplastic Spectrum

- a. brain tumors—primary or metastatic
- b. Hodgkin's disease⁶⁷
- c. malignant melanoma
- d. lung cancer
- e. enteric adenocarcinoma

- (2) Dosage—100 mg/M² x 2 I.V. q 6 weeks

B. CCNU—oral preparation

(1) Antineoplastic Spectrum

- a. brain tumors
- b. Hodgkin's⁶⁸
- c. renal cell carcinoma—treatment of choice for this refractory tumor—response rate 25-33%.
- d. lung cancer
- e. enteric adenocarcinoma

- (2) Dosage—130 mg/M² p.o. q 6 weeks (on empty stomach)

C. Methyl-CCNU—oral preparation

(1) Antineoplastic Spectrum

- a. brain tumors
- b. Hodgkin's
- c. malignant melanoma
- d. lung cancer
- e. enteric adenocarcinoma

- (2) Dosage—175-200 mg/M² p.o. q 6 weeks (on empty stomach)

III. DTIC* (DIMETHYL-TRIAZENO-IMIDAZOLE-CARBOXAMIDE)

A. Antineoplastic Spectrum

- (1) Most effective agent for malignant melanoma
- (2) Soft tissue sarcoma

B. Toxicity

- (1) Bone marrow suppression—delayed—maximal 2½-3 weeks after drug given
- (2) Nausea and vomiting—worse first 2 days of each course
- (3) "Flu"-like syndrome with hyperpyrexia

C. Dosage

- (1) 250 mg/M² IV for 5 consecutive days—repeat every 3 weeks

IV. Platinum* (cis-diaminodichloroplatinum)

A. Antineoplastic Spectrum

- (1) Testicular⁶⁹ and ovarian cancer

B. Toxicity

- (1) Nausea and vomiting
- (2) Cumulative nephrotoxicity
- (3) High frequency hearing loss

C. Dosage

- (1) 20 mg/M² x 5 I.V. q 3-4 weeks; 3-5 courses maximal due to nephrotoxicity

V. L-ASPARAGINASE*

This drug represents the first agent to utilize a qualitative difference between the neoplastic cell and the normal cell. Asparagine is an essential amino acid for the leukemic cell, but not for the normal cell, and this drug inhibits asparagine synthetase. It was hoped that this would represent a major breakthrough in cancer chemotherapy; however, at the present time, this drug has very limited clinical efficacy. The problems were:

- (1) rapid drug resistance—leukemic cells will utilize alternate metabolic pathway with glutamine instead of asparagine.
- (2) large molecular weight of drug causes poor tissue permeability.
- (3) drug derived from E.coli and is an antigen capable of causing severe allergic reactions including anaphylaxis.
- (4) wide range of toxicity including hepatic, renal, pancreatic, neurological, and coagulopathies.

A. Antineoplastic Spectrum

- (1) Acute lymphoblastic leukemia⁷¹

B. Toxicity—see above

C. Dosage—1000 International units/kg/day I.V.

Combination Chemotherapy

In the past several years it has become painfully obvious that there is no "magic bullet" for cancer (especially with the failure of L-asparaginase), and therefore, much work has been directed to combining previously available cancer chemotherapeutic agents. Biochemical, pharmacological and cellular kinetic data form the basis of combination chemotherapy; also, it is hoped that combination chemotherapy will make drug resistance less likely.⁷²

The rationale behind all combination chemotherapy is to combine antineoplastic drugs which:

- (1) are all active individually against the specific tumor

*Investigational drug

- (2) exhibit different toxicities
- (3) have different mechanisms of action
- (4) are synergistic

MOPP⁹ combination chemotherapy for advanced Hodgkin's disease is an excellent example of these principles. Each of these agents is active individually against Hodgkin's disease. Nitrogen mustard and Procarbazine both cause myelosuppression (necessitating lowering the dosage of mustard that would be used if mustard were used alone), whereas Prednisone has no marrow toxicity and Oncovin has only mild myelosuppressive activity. Oncovin causes neuromuscular toxicity primarily and Prednisone causes the familiar cushingoid side effects—hypertension, diabetes, osteoporosis, ulcer, etc. These drugs all act at different levels: mustard is an alkylating agent and alkylates DNA, Oncovin is a stathmokinetic agent, Prednisone is an adrenocortical hormone which causes lymphoid dissolution, and Procarbazine is similar to an alkylator, although there is no cross-resistance, and it acts by releasing hydrogen peroxide which denatures DNA. More recently, Bleomycin has been added to the full MOPP regimen. This antitumor antibiotic has definite activity against Hodgkin's, and has no myelosuppression, but instead has fever, chills, and cumulative pulmonary fibrosis as its toxicity. The total Bleomycin dosage is only 60 units and the possibilities of pulmonary fibrosis with such a low total dosage is highly unlikely.

The results with MOPP and MOPP + Bleomycin for State III and IV Hodgkin's disease have significantly improved survival; 75-90% of untreated and about 50% of previously treated patients will undergo a complete remission which, with maintenance MOPP, will have a median duration of 6+ years.⁷³ Maintenance MOPP is given every other month for nine courses (18 months). At the end of that time all chemotherapy is stopped.

Combination chemotherapy is the mainstay for remission induction in acute leukemia. Prednisone, 40-60 mg/M² for five weeks plus Oncovin, 1.5-2.0 mg/M² I.V. once a week for five weeks will produce a complete remission in 95% of patients with acute lymphoblastic leukemia.^{74,75}

Other diseases that are responsive to combination chemotherapy are breast cancer,^{76,77} multiple myeloma,²⁶ non-Hodgkin's lymphoma, soft tissue sarcomas, and testicular cancer. Other neoplastic diseases are being treated by various combination chemotherapy regimens at various centers.

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Applied Pharmacology of Anti-Hypertensive Drugs

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The large number of agents used in the treatment of hypertension is testimony to the fact that no single drug or combination of drugs is satisfactory in all cases. In this review we will describe the major drugs used in hypertension and indicate some of the agents and combinations which we have found useful and which appear to be worthy of trial on the basis of reports from the literature. There are important pharmacologic principles which must be understood in order to use each of these agents rationally. We recognize that there is considerable controversy concerning the use of specific drugs in hypertension and those that we use are not universal choices.

1. Why treat hypertension?

The evidence that hypertension should be treated is now overwhelming.¹ Epidemiologic studies have shown clearly that life expectancy is directly proportional to the elevation in blood pressure, and that untreated hypertensives are more prone to cerebral infarction, intracranial hemorrhage, renal failure and coronary disease. The effect of therapy was shown by a prospective Veterans Administration Cooperative study² which demonstrated that the frequency of cerebrovascular disease, dissecting aneurysm and renal decompensation was less in hypertensive males who were treated. Treatment made no difference to the frequency of later myocardial infarction; and other studies have shown that the frequency of death from coronary heart disease may be increased in treated hypertensives.³ This probably reflects the decreased risks of dying from cerebrovascular disease or renal failure.

2. What is hypertension?

There is no universally accepted definition of hypertension at present. Furthermore, sphygmomanometer blood pressure recordings are notoriously inaccurate. Differences in the size of the cuff, size of the arm, variations in the definition of diastolic pressure, diurnal fluctuation in normal blood pressure and unconscious bias by the observer are potential sources of error.⁴ The systolic pressure is more variable than the diastolic pressure and may be elevated by age and arterial thickening, anxiety and high output states such as pregnancy, anemia and thyrotoxicosis. Even the level of diastolic pressure associated with increased morbidity and mortality is not known precisely.

The Veterans Administration Cooperative study showed that men with diastolic pressures between 90 and 114 mm Hg benefited from treatment, but the outcome for those with diastolic pressures between 90 and 100 mm Hg was not analyzed separately.

We arbitrarily consider that hypertension is present when the systolic pressure is greater than 150 mm Hg and the diastolic pressure is greater than 90 mm Hg as recorded by the disappearance, rather than the muffling, of the Korotkoff sounds. There is no general agreement concerning the treatment of systolic hypertension, that is, elevation of systolic blood pressure above 150-160 mm Hg without elevation of the diastolic pressure.⁵ If this is associated with evidence of left ventricular hypertrophy or damage to small vessels, then a trial of anti-hypertensive therapy may be indicated although there is danger of impairing organ perfusion in these patients who usually have generalized arteriosclerosis.

3. Are there different treatment regimens for different hypertensive situations?

Most patients with hypertension can be controlled by one drug combination or another. The number of possible combinations is endless. The selection of drugs for the individual patient should be guided by such factors as the urgency of the situation, the properties of the drug and the associated system disorders in the patient. As indicated below most patients with mild hypertension are first treated with oral diuretics and ordinarily other agents are added rather than replacing the thiazides in patients in whom diuretics alone are unsuccessful. Drugs commonly used in the treatment of hypertensive crisis, in severe complicated hypertension and mild hypertension are listed in Table I.

Applied Pharmacology of Drugs Used in the Treatment of Mild Hypertension

A. Oral Diuretics

Thiazide diuretics have been used in the treatment of hypertension for almost 20 years and are now well established as the first line of therapy, particularly for patients with mild hypertension. Their mode of action is probably largely by direct vasodilation of the arteriolar bed, with a subsequent fall in peripheral vascular resistance. The decrease of vascular volume due to sodium diuresis is also considered to play a role. However, with prolonged therapy there is no sustained decrease in volume. Sodium loss may play a role in vasodilation since decreased sodium content in

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Table I
COMMONLY USED ANTI-HYPERTENSIVE DRUG

<i>Generic Name</i>	<i>Trade Name</i>	<i>Dose and Mode of Administration</i>	<i>Onset of Action</i>	<i>Duration of Effect</i>	<i>Major Adverse Effects</i>
<i>A. Mild and Severe Hypertension</i>					
Hydrochlorothiazide	Hydrodiuril (Merck)	50 mg bid po	4 hours	12 hours	hypokalemia hyperglycemia hyperuricemia
Chlorthalidone	Hygroton (Geigy)	100 mg qd po	6-12 hours	24 hours	hypokalemia hyperglycemia hyperuricemia
Methyldopa	Aldomet (Merck)	250-500 mg qid po	3-5 hours	24 hours	somnolence hemolytic anemia
Hydralazine	Apresoline (Ciba)	100-200 mg qd po	3-4 hours	24 hours	angina reflex tachycardia lupus-like reaction
Guanethidine	Ismelin (Ciba)	25-150 mg qd po	4-5 days	7 days	postural hypotension diarrhea failure of ejaculation
Propranolol	Inderal (Ayerst)	10-100 mg qid po	2-4 hours	8-12 hours	cardiac failure asthma bradycardia
Clonidine	Catapres (Boehringer-Ingelheim)	400-3600 ug qd po	3-4 hours	24 hours	cardiac failure bradycardia hypertensive crisis on abrupt withdrawal
<i>B. Hypertensive Crisis</i>					
Diazoxide	Hyperstat (Schering)	300 mg bolus IV	5 minutes	6-12 hours	fluid retention hyperglycemia
Reserpine	Serpasil (Ciba)	1.0-2.5 mg IM	2-3 hours	10-12 hours	sedation
Nitroprusside	Nipride (Roche)	IV infusion	immediate		severe hypotension

vascular smooth muscle has been reported in thiazide-treated patients and may be associated with decreased responsiveness to vasoconstrictors. Thiazides produce a proportional decrease in both systolic and diastolic pressures over several weeks. The fall in blood pressure is smooth without significant postural effects or peaks and valleys throughout the day. Their hypotensive effect is not dose-related so that larger doses do not produce better responses. The common side effects associated with diuretic therapy for hypertension are hyperuricemia and hyperglycemia and are mild and controllable. Although potassium depletion may occur, potassium supplements are not necessary in most patients on a conventional diet, but the serum potassium should be periodically checked.

The diuretics most used in the treatment of hypertension are chlorthalidone (Hygroton-Geigy) and the thiazides. We use chlorthalidone 100gm daily because of its long half-life, or hydrochlorothiazide 50 mg twice daily. Although furosemide is popular in hypertension, there is no evidence that it is more effective than the thiazides. One controlled study has shown that furosemide was less effective than hydrochloro-

thiazide in reducing blood pressure.⁶ The shorter half-life, greater cost, increased frequency of the side effects and the evidence that it is less effective mean there is little rationale for its use in the treatment of the non-edematous hypertensive. Spironolactone (Aldactone A—Searle) has been advocated as a diuretic for essential hypertension, but there is no evidence that it offers any advantage over the thiazides. Spironolactone has been particularly effective in patients with low renin hypertension and this has been utilized as evidence that in such patients an aldosterone-dependent increase in blood volume plays a pathogenic role. However, thiazides are as effective as spironolactone in such patients and are less expensive and less likely to cause untoward gastrointestinal effects.

B. Methyldopa (Aldomet-Merck)

Methyldopa is an effective drug and is not as frequently associated with unpleasant dose-related side effects as other potent antihypertensive agents. It lowers blood pressure by decreasing vascular resistance. The major mechanism of action is probably on auto-

onomic function in the central nervous system. Methyldopa also has peripheral effects on neurotransmitter function at post-ganglionic adrenergic nerve endings. It interferes with norepinephrine synthesis by inhibiting the decarboxylation of dopamine. It also leads to the production of a false neurotransmitter (α methyl norepinephrine) which competes with norepinephrine for adrenergic receptors.

Methyldopa produces a smooth decrease in blood pressure and is not usually associated with postural hypertension. Its effects are potentiated by thiazides. It is useful in patients with poor renal function because it does not interfere with renal blood flow or glomerular filtration rate. The major dose-related side effect is somnolence which usually subsides with continued treatment and rarely requires removal of the drug. The most serious side effect is a Coombs'-positive hemolytic anemia which occurs very rarely and quickly subsides after withdrawal of the drug and administration of corticosteroids. The frequency of positive direct Coombs' tests is much more common than the occurrence of hemolytic anemia. Methyldopa is occasionally associated with pyrexia which subsides on withdrawal of the drug. It may cause galactorrhea in some women because it stimulates prolactin secretion from the anterior pituitary. Abnormalities in liver function tests (particularly enzyme elevations) are frequently encountered but permanent hepatic damage has not been reported. Nevertheless methyldopa is not ordinarily used in patients with liver disease.

There is great individual variation in the dose required to reduce blood pressure. The usual dosage ranges from 1 to 2 gm per day in four divided doses. The maximum effect occurs about four hours after an oral dose. Methyldopa interferes with the determination of urine catecholamines and should be withdrawn for at least three days in patients suspected of having a pheochromocytoma before urine collection is commenced. We use methyldopa as the agent of choice for moderate or severe hypertension usually together with oral diuretics and as the agent of first choice in patients with poor renal function.

C. Hydralazine (Apresoline-Ciba)

Hydralazine is a popular drug in the United States but is virtually never used outside North America⁷ because of fears about the frequency of side effects. In fact, it is an effective drug with small risk of side effects when used in doses less than 300 mg per day. The mode of action is by direct relaxation of arteriolar smooth muscle. There is little postural hypotension. The fall in blood pressure is usually associated with a reflex increase in the heart rate and cardiac output. This reflex tachycardia may lead to angina or

myocardial infarction in patients with underlying coronary artery disease. A useful combination is hydralazine with propranolol which blocks the reflex increase in heart rate and cardiac output by its beta-blocking and direct myocardial depressant effects.

Hydralazine in doses over 300 mg per day may be associated with lupus-like syndromes. It is also occasionally accompanied by headaches, vomiting, diarrhea, drug rashes and bone marrow suppression. Despite these drawbacks it is a useful agent in hypertension and may be considered either alone or in combination with propranolol as an alternative to methyldopa.

D. Guanethidine (Ismelin-Ciba)

Guanethidine is an effective anti-hypertensive drug but the dose is difficult to manipulate and its use is frequently associated with annoying side effects. The site of action is at the adrenergic nerve ending, where it depletes norepinephrine with a resultant decrease in peripheral vascular resistance. Guanethidine inhibits the reuptake of norepinephrine into storage granules in the post-ganglionic nerve terminal leading to gradual depletion of norepinephrine stores. In patients with expanded catecholamine stores (eg. pheochromocytoma), guanethidine administration can produce severe and prolonged catecholamine excess.

Guanethidine is associated with a number of unpleasant dose-related side effects. Diarrhea due to increased gastro-intestinal tract motility frequently occurs. The pathogenesis is not well understood but it can be relieved in many cases by the use of codeine. Men treated with guanethidine often develop failure of ejaculation, rather than failure of erection. The latter more often occurs with treatment with the ganglion blocking drugs. Postural hypotension is frequently associated with the use of guanethidine and occurs particularly on rising in the morning and after exercise. The action of guanethidine is blocked by the tricyclic anti-depressants and amphetamines. These drugs inhibit the uptake of guanethidine at post-ganglionic nerve endings, and should not be used in combination with it.

The dose of guanethidine varies from 10 to 35 mg per day to 200 mg per day. The maximum effect occurs in 4 to 5 days so that changes in dose and dosage schedule should not occur more frequently than each 5 to 7 days. The effective dose of guanethidine is potentiated by the simultaneous use of oral diuretics and much lower doses are needed when these drugs are used in combination. Although its efficacy is unquestioned, because of side effects we reserve guanethidine now only for those patients who have not responded to diuretics, methyldopa, hydralazine or propranolol.

Applied Pharmacology of Drugs Used in the Treatment of Severe Complicated Hypertension

The sequence of drugs and the combinations used in severe hypertension or malignant hypertension may be the same as those in mild hypertension, but additional drugs are often required and different combinations may be necessary. Our own approach is still to start with oral diuretics followed by methyldopa. However, should these agents prove ineffective then we readily turn to the use of propranolol or clonidine.

A. Propranolol (Inderal-Ayerst)

Propranolol is an effective anti-hypertensive drug, particularly in severe hypertension. It causes a fall in blood pressure similar to that of effective doses of methyldopa or guanethidine. The mode of action is not related to vascular beta-adrenergic blockade since the beta receptors of peripheral vessels are largely vasodilator. Propranolol probably works at multiple sites, including the central nervous system, the heart (by a direct myocardial depressant effect lowering cardiac output) and the kidney (by inhibition of renin release from the juxta-glomerular apparatus). Laragh and his co-workers⁸ have suggested that propranolol is most effective in hypertension associated with high circulating renin concentrations and should be selectively used in patients within this group. It is proposed that patients with high-renin hypertension have greater risks of vascular complications and that propranolol, which inhibits renin release, might be beneficial in this group. However this view is not universally accepted and propranolol may be useful in patients regardless of their circulating renin concentration.

When used in carefully selected patients, propranolol is a relatively safe drug with few serious side effects. Its non-specific myocardial depressant effects may lead to the precipitation of congestive cardiac failure in patients with cardiomegaly or bradycardia. It also may be associated with bronchospasm due to the inhibition of beta-receptors in the smooth muscle of the bronchial tree. The Food and Drug Administration has not as yet approved propranolol for use in hypertension, although this is one of the most common indications for its use.⁹

The dose of propranolol can be titrated against the blood pressure and pulse rate with careful monitoring of the side effects. Sometimes doses in excess of 500 mg per day may be necessary and are well-tolerated provided patients are carefully selected. A reasonable starting regimen is 10 mg each six hours with doubling of the dose each three weeks until an effect is obtained. We use propranolol in severe hypertensives who have not responded to methyldopa.

B. Clonidine (Catapres-Boehringer Ingelheim)

Clonidine is a potent anti-hypertensive drug which is used extensively in Europe and has just been released for general use in the United States. Its mode of action is by a central effect on the vasomotor center with a secondary decrease in cardiac output. Because of its depressant effect on cardiac output, it should not be used with drugs such as propranolol or guanethidine. It is most valuable when used in combination with oral diuretics in patients with moderate or severe hypertension. Its place with respect to other drugs in the treatment of hypertension will have to await further study, but it appears very likely that it will be a useful relatively safe drug for severe hypertension. At present we consider clonidine the next drug to use in patients who have not responded to methyldopa or propranolol.

Emergency Drugs in the Treatment of Hypertension

Occasionally drugs are needed to produce a rapid fall in blood pressure (for example, over a few minutes in patients with hypertensive crisis) or to produce a less immediate but still rapid fall in blood pressure (for example, after intra-cerebral or sub-arachnoid hemorrhage). These clinical situations may be very difficult to manage because decreasing the blood pressure too slowly may result in rupture of an intracranial artery and other complications of severe hypertension, and lowering the blood pressure too rapidly may produce major organ infarction in areas where flow is already compromised by severe and widespread arteriosclerosis. The approach to patients requiring urgent treatment of hypertension has been altered considerably since the advent of diazoxide in the late 1960s. Prior to this, it was often necessary to use less satisfactory drugs such as the ganglion-blockers.

A. Diazoxide (Hyperstat-Schering)

Diazoxide is now the most frequently used drug in hypertensive crisis because it is usually rapidly effective and safer and easier to use than the alternatives which include the ganglion blockers, nitroprusside and reserpine. Diazoxide is a congener of the thiazide diuretics, but does not have any diuretic actions. In fact it promotes sodium and water retention. It probably works by a direct relaxant effect on arteriolar smooth muscle. It is given intravenously as a bolus in a dose of 300 mg (5 mg/kg). It is best given into the tube of an intravenous drip as it is an alkaline solution (pH 11.6) and may be very irritant to subcutaneous tissue. The rationale for the bolus infusion (given preferably in 10 seconds) is that diazoxide is rapidly bound to albumin in the circulation. A bolus injection is given so that enough unbound diazoxide is available to the vascular smooth muscle receptors to produce a hypotensive effect. After 5 minutes the

diastolic pressure should have fallen to around 110 mm Hg and will remain low for 6 to 12 hours. If the response is inadequate a second injection might be given after 60 minutes.

Furosemide 40 mg intravenously should be given after diazoxide routinely to counteract salt and water retention. Oral anti-hypertensive drugs should be started as soon as the blood pressure is under control. The rapid fall in blood pressure induced by diazoxide may be associated with myocardial or cerebral ischemia in patients with arteriosclerosis but this is surprisingly uncommon. Hyperglycemia and hyperuricemia may also occur, but rarely require active intervention. Severe hypotension is also uncommon and if it occurs should be corrected with intravenous norepinephrine.

B. Reserpine (Serpasil-Ciba)

Reserpine is one of the oldest drugs used in the treatment of hypertension. It has now fallen out of favor as an oral agent for long term use in mild hypertension because of its side effects, particularly the occurrence of central nervous system depression. However, it may still have a minor place as a parenteral agent in the urgent treatment of severe hypertension. Its mode of action is by depletion of central and peripheral stores of norepinephrine. Peripherally the effects are very complex and include inhibition of norepinephrine uptake by the postganglionic adrenergic nerve terminals. This leads to feedback inhibition of tyrosine beta-hydroxylase which in turn causes decreased catecholamine synthesis. An intramuscular dose of 1.0 to 2.5 mg produces a maximal fall in blood pressure at two to three hours which lasts usually for 10-12 hours. The effect is gradual and may be very useful in patients with recent subarachnoid hemorrhage. The major disadvantage to its use in this situation is sedation which interferes with the monitoring of the conscious state in these patients. The other side effects which may be associated with its long term oral use (depression, nasal stuffiness, diarrhea, peptic ulcer activation and possible increased risk of breast cancer) are probably not relevant to its short term use in emergency situations.

C. Sodium Nitroprusside (Nipride-Roche)

Nitroprusside is a potent anti-hypertensive agent which produces direct relaxation of arteriolar smooth muscle. It is given by intravenous infusion and has an immediate transient effect. The solution must be specially prepared every 12 hours, kept from exposure to light, and frequent monitoring of the dose is necessary for good control. It is given as a continuous intravenous infusion. Despite the difficulties involved, nitroprusside has been universally effective in the hands of those experienced in its use and properly set up to

monitor it.¹⁰ Ideally this should be done using an apparatus for continuous recording of blood pressure.

D. Trimethaphan (Arfonad-Roche)

Trimethaphan is a ganglion-blocking drug which is now rarely required in emergency treatment of hypertension. Its effect is also immediate with a duration of action of about 15 minutes. It is given as an intravenous infusion. Like other ganglion blockers, its use is associated with paralysis of both sympathetic and parasympathetic ganglia and adverse effects such as bladder dysfunction, blurred vision and constipation are common.

Future Therapy in Hypertension

A. Specific Drugs for Selected Patients

At present most centers treat hypertensive patients by trial and error. This approach has been challenged by Laragh and colleagues⁸ who have suggested that patients with low circulating renin concentrations have "volume-dependent" hypertension and respond best to diuretics, and that patients with high circulating renin concentrations have "vaso-constrictor" hypertension and respond best to propranolol, which inhibits renal renin release. Although this approach is an attractive one, it is still not easy to apply practically because most hypertensives have renin levels which are neither "high" nor "low" but in the normal range. The concept can also be debated on the theoretical grounds that propranolol does not work only by inhibiting renin release but also has central and cardiac effects as well. Nevertheless, the idea of selecting specific drugs for individuals based on pathophysiologic principles is an exciting concept compared with the pragmatic approach to hypertension physicians are forced to use at present.

B. The Angiotensin Inhibitors

Recently investigators have started using drugs which interfere with the renin-angiotensin-aldosterone system as pharmacologic tools in the study of the pathophysiology of hypertension.¹¹ Drugs are known which inhibit renin release (for example, propranolol), the conversion of angiotensin I to angiotensin II¹² and the peripheral effects of angiotensin II on arteriolar smooth muscle and the adrenal gland (saralasin).¹³ Unfortunately, these drugs have other actions as well, but they are beginning to provide new insights into "essential" hypertension and the complexities of the renin-angiotensin-aldosterone system. The use of saralasin, the angiotensin analogue, has been advocated in the screening of hypertensives to detect those whose disorder is due to increased activity of the renin-angiotensin system on a renovascular basis.¹⁴ Certainly any improvement in the current screening for renovascular hypertension would be a considerable

advantage, since the current cost of such screening is considered to outweigh the benefits in large populations. It is likely that in the next few years we may see these drugs or their analogues being used increasingly as specific diagnostic or therapeutic agents in hypertension.

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Malignant Hyperthermia: A Survey*

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Abstract—Malignant hyperthermia is a pharmacogenetic disease triggered by many potent inhalation agents, associated with high fever, frequently, muscular rigidity, marked metabolic aberrations, such as acidosis and hypoxia—and frequently ends in death. It has been reported with increasing frequency in the past decade.

It is theorized that the underlying defect lies in the inability of the sarcoplasmic reticulum to bind and store calcium, following exposure to some anesthetic agents.

Statistics on the entity and experimental data are presented. A regimen of management is suggested from the point of view of anticipation, early recognition and immediate and late treatment.

What was once a rare curio in the field of anesthesia, namely, an unexplained and often lethal hyperpyrexia occurring during anesthesia, hinted at by Burford (1940),¹ Guedel (1951),² but clearly described by Denborough et al. (1960, 1962),^{3, 4} has come front-stage center in the past decade as the syndrome of

malignant hyperthermia. It has become the subject of world-wide investigation, amassing a respectable bibliography, and was the topic of an International Symposium held at the University of Toronto in May, 1971. To date, some 600 cases are known to have occurred.

Malignant hyperthermia (MH) is a physiological maelstrom which frequently ends in death—the mortality rate is 64 percent. It is a pharmacogenetic disease occurring in man and pigs, and recently, case reports involving a dog⁵ and a cat⁶ have been recorded. In susceptible individuals, it is triggered by any potent inhalational anesthetic agent, such as halothane, cyclopropane, diethyl ether, methoxyflurane and more recently, enflurane; the muscle relaxant succinylcholine can exacerbate the syndrome. The outstanding clinical manifestations are the development of a high fever (temperatures as high as 112°F have been recorded⁷) usually within one to two hours of induction of anesthesia, and frequently attended by a profound skeletal muscle rigidity.

Other early clinical signs are: tachycardia and arrhythmias—frequently ventricular in origin—tachypnea, cyanosis, hot skin, the development of excessive heat in the soda-lime canister, and the appearance of dark blood in the surgical field. The metabolic aberrations consist of a disturbingly rapid onset of an unusually severe metabolic acidosis; in addition, one finds a respiratory acidosis, hypoxemia, hyperphosphatemia, hypermagnesemia, and an initial hyperkalemia which may be followed by a hypokalemia.

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*What manner of men are we,
That from flights of true magnificence,
We are plucked with Icarian consequence,
By jots of misplaced chemicals? —N. Giosa

Subsequently, there is an exodus of intracellular skeletal muscle enzymes and protein, so that one sees elevated serum creatine phosphokinase (CPK), glutamic oxaloacetic transaminase (SGOT), glutamic pyruvic transaminase (SGPT), lactic dehydrogenase (LDH), and one may find myoglobin in the urine.

Those who die early, do so from cardiovascular deterioration, i.e., ventricular fibrillation and cardiac arrest; those who die later, do so from acute renal failure, acute heart failure, disseminated intravascular coagulation, neurological deterioration, and massive electrolyte and acid-base disturbances. Survivors usually make a complete recovery, although their convalescence may be protracted and turbulent and there may be appreciable pain, weakness and swelling of muscles—especially of their legs.

In some instances, the syndrome is hereditary in nature and is transmitted as an autosomal dominant predisposition. In 1970, Britt and Kalow⁸ reported a total of 60 cases of M.H. which had occurred in 14 independent families (the author is aware of another family with multiple episodes of M.H.), which represented about one-third of the then known cases. So that the majority of cases occur in sporadic individuals with no known affected relatives.

The only statistical review of the syndrome was published by Britt and Kalow⁸ in 1970, and is the source of most of the statistical data pertaining to this entity. The paper reviews 89 patients who had received 94 anesthetics, with resulting MH.

The frequency of MH is about 1 in 15,000 for children and the figure suggested for adults has been variously stated to be from 1 in 50,000 to 1 in 100,000⁹ anesthetics. The highest incidence occurs in children, adolescents, and young adults. There have been reports of a few cases occurring in patients in their seventies; the youngest known case is a two month old child.

The condition occurs in males twice as frequently as in females; however, in the first two decades, the incidence is the same for both sexes.

All three major racial groups, Oriental, Negro, and Caucasian, have been involved, but the majority of cases have been Caucasian.

Denborough et al.^{3, 4} was the first to record multiple deaths in a family during or following general anesthesia. Out of 38 known to have been at risk, 10 died. He suggested that the pattern of inheritance was compatible with an incompletely penetrant dominant gene or genes.

An even larger family from Wausau, Wisconsin, was studied,¹⁰ wherein MH had occurred in three generations, the first case in 1922 and the last in 1968. Of 116 members known to have been at risk, there

were 20 cases of hyperthermia and 8 fatalities.

The mode of inheritance is autosomal dominant with reduced penetrance—meaning there may be generation skipping, whereby a normal parent may transmit the trait to his or her offspring—and variable expressivity—meaning that the extent to which the trait is expressed by individuals in a family may be variable, so that a family may show 100 percent survival or only a limited temperature rise. The inheritance is not sex-linked.

The syndrome may not unfold itself following the administration of a first anesthetic. It may take a second, third or even a fourth anesthetic before MH develops. Of the 89 patients in the review 21 had previous anesthetics without hyperthermia. The reason for this is undetermined, and one can only speculate as to whether other modifying factors such as previous increased physical activity, the intake of certain drugs, duration of anesthesia, etc. may predispose toward development of the syndrome.

It is notable that a fair number of patients who experienced MH had musculoskeletal abnormalities such as kyphoscoliosis, strabismus, ptosis, hernias, recurrent spontaneous joint dislocations; and some complained of severe muscle cramps unrelated to exercise. Of the 89 patients in Dr. Britt's et al.⁸ review, 32 had musculoskeletal abnormalities most of whom developed skeletal muscle rigidity during anesthesia. It is not surprising, therefore, that about 25 percent of the cases of hyperthermia occurred during orthopedic procedures.

The association of other muscle disorders with MH has been reported by a number of observers. Saidman et al.¹¹ reported a case in a 12 year old myotonia congenita. Following the death of a strikingly muscular 16 year old, Steers et al.¹² investigated the family and observed the presence of a similar habitus in a 56 year old father and a 19 year old brother. The father showed the characteristics of Barnes' myopathy, with asymmetrical areas of hypertrophy and atrophy in both recti femori and local hypertrophy of other muscles. Denborough et al.¹³ describes a definite myopathy affecting predominantly the lower muscles of the thigh in the father and paternal aunt of a patient who had survived an episode of MH.

In their paper, Britt and Kalow⁸ divide the cases into two groups on the basis of the presence or absence of skeletal muscle rigidity. It has been suggested that the etiologies may be different for the two types—whether this is so is not certain. Both rigid and non-rigid cases have occurred in the same family. The biochemical abnormalities such as hypoxemia, respiratory and metabolic acidosis were more pronounced in the rigid cases and survival was slightly less where rigidity was present.

tending this syndrome, the following mean observations are given: arterial Po₂ (mmHg)—rigid and non-rigid, 58; arterial Pco₂ (mmHg)—rigid, 75, non-rigid, 38; arterial pH—rigid, 7.07; base excess (mEq/L)—rigid, -13, non-rigid, -10.5; serum potassium (mEq/L)—rigid, 7.1, non-rigid, 4.7.

Berman et al¹⁴ made serial observations in pigs while inducing MH by exposing them to halothane. Within 3 minutes following exposure to halothane, the pH went from 7.36 to 7.07 before any significant temperature change had occurred. We wish to underscore the rapid onset of acidosis, both metabolic and respiratory, in the early stages of this syndrome.

That we might more meaningfully address ourselves to the understanding of the possible etiology of this fascinating syndrome, we wish to very briefly review how the calcium ion activates the contractile proteins, how the excitation-contraction coupling is regulated, and how cell metabolism produces energy.

Contraction of striated muscle is effected by the interaction of the thick filament, myosin, and the thin filament, actin, of the sarcomere (figure 1). The thick myosin filament has lateral cross-bridges which are the site able to interact with actin, and fittingly contains an ATPase enzyme. The thin filament is composed of three proteins: actin, which is the "backbone" of the thin filament, and the modulatory proteins, troponin and tropomyosin. The activator of the contractile proteins is the calcium ion. When the calcium ion concentration is 10^{-8}M , the tropomyosin-troponin complex inhibits the actin-myosin interaction.



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When the myoplasmic free calcium rises to $5 \times 10^{-6} \text{M}$, the binding of calcium to troponin releases the inhibition of the actin-myosin interaction, initiating the contractile process.

The regulator of skeletal muscle intracellular calcium between the upper and lower limits for the normal response of contraction and relaxation is the longitudinal sarcoplasmic reticulum (figure 1). The sarcoplasmic reticulum is a tortuous system of tubules which envelops the contractile filaments and has enlarged terminal portions called lateral sacs or cisterns which contain calcium and are located next to the transverse tubules. The transverse tubule serves as a conduit through which the action potential is transmitted into the interior of the fiber along a system of radially oriented structures. The action potential crosses the septate junction causing the cisterns to release ionic calcium into the sarcoplasm. The higher concentration of calcium brings about the interaction of myosin and actin with resulting muscle contraction. The chemical energy for this reaction is supplied by the hydrolysis of the high energy compound, adenosine triphosphate (ATP).

Following this calcium release, the sarcoplasmic reticulum then reduces the ionic calcium of the sarcoplasm, causing relaxation by binding and actively transporting calcium into the reticulum and then storing the calcium into the cisterns. This process also requires energy which is supplied by the hydrolysis of ATP, so that, both contraction and relaxation require the splitting of ATP. Failure to reduce the concentration of sarcoplasmic calcium will prevent relaxation resulting in contracture or physiologic rigor.

We now wish to briefly turn to the subject of energetics and cell metabolism.¹⁵

Adenosine triphosphate, generally referred to as ATP, is the principal source of energy whereby the cell provides its functions of membrane transport, muscle contraction, and protein synthesis. Attached to its molecule are two high energy phosphate bonds, each containing about 8000 calories per mole of ATP. When ATP releases its energy, a labile phosphoric acid radical is split away forming adenosine diphosphate (ADP); this action is reversible.

The chemical energy that is stored in the ATP molecule is derived from the foodstuffs— glucose, fatty acids, amino acids, and oxygen. Glucose enters the cytoplasm and is converted to pyruvic acid (glycolysis) and a small amount of ATP, about 5 percent, is formed (pathway 3, figure 1). As no oxygen is needed for this process, it is referred to as anaerobic metabolism. The fatty acids and most amino acids are converted into acetoacetic acid. The pyruvic and acetoacetic acids are converted into the compound acetyl co-A in the cytoplasm, then enters the mito-

chondria with oxygen, where via the tricarboxylic acid cycle and the process of oxidative phosphorylation, 95 percent of ATP is formed (pathway 2, figure 1), as well as carbon dioxide and water. Since these reactions require oxygen, it is referred to as oxidative energy metabolism.

The most abundant store of high energy phosphate bonds in the cells is not ATP, but creatine phosphate which has a high energy bond of 9500 calories per mole. It can transfer energy interchangeably with ATP according to the equation:



This reaction is catalyzed by the enzyme creatine phosphokinase (CPK) (pathway 1, figure 1). Creatine phosphate serves as a storage depot for energy keeping the concentration of ATP at a virtual constant level. Only after all the creatine phosphate is used will the concentration of ATP fall significantly.

During strenuous activity, energy is derived from ATP already present in the muscle cells, the stored creatine phosphate, anaerobic energy obtained by glycolytic breakdown of glycogen to lactic acid, and oxidative energy continuously released by oxidative processes in the cell. However, the oxidative processes are too slow to meet the energy needs during strenuous bursts of activity so that the other three sources are called upon to their maximum extent. The amount of ATP and creatine phosphate present in the muscle cells can only sustain maximum contraction for a period of 20 to 30 seconds so that anaerobic glycolysis becomes the chief source of energy for strenuous activity lasting more than 30 seconds and less than two minutes. Following strenuous bouts of exercise, muscle glycogen may become almost zero while the lactic acid blood concentration becomes very high.

Returning again to the subject of myoplasmic calcium, according to Bianchi¹⁶ "The muscle fiber has a secondary system that operates to accumulate calcium, i.e., the mitochondria. The mitochondria can use the energy from ATP to sequester Ca^{++} and prevent the myoplasmic Ca^{++} from rising to toxic levels, i.e., approximately 10^{-4}M . The mitochondria however, continue to sequester calcium even though the ATP level falls below that necessary to support calcium accumulation; the mitochondria accomplishes this by using high energy intermediates obtained from the oxidation of substrates to provide the energy for calcium resequestration. In this state, this is accomplished at the sacrifice of formation of ATP and thus the mitochondria become uncoupled, even though the oxidation of substrates continues. In skeletal muscle the predominant form of energy comes from anaerobic glycolysis which is relatively inefficient as a source of ATP compared to ATP synthesized from

oxidative phosphorylation. As a consequence of the high demand for ATP due to the maintenance of tension, the ATP can fall to a level that does not support Ca^{++} uptake by mitochondria, which then become uncoupled. If the myoplasmic free calcium level rises to approximately $10^{-4}M$, the inner surface of the sarcolemmal membrane may become leaky to intracellular K^+ , Ca^{++} and Mg^{++} and in general break down as a barrier to the ionic traffic and soluble enzymes. As a consequence, general breakdown of muscle tissue may ensue." The ions and molecules leak across the sarcolemma in the direction of their concentration gradients, so that potassium, phosphate, magnesium, enzymes and myoglobin flow outward and calcium moves inward.

It is theorized that the underlying defect in the entity of MH is in the sarcoplasmic reticulum, especially in the terminal sac or cistern, which following exposure to anesthetic agents such as halothane is rendered incapable of binding and storing calcium. The higher myoplasmic calcium brings about the following: (1) activates myosin ATPase, hydrolyzing ATP to ADP, phosphate and heat (figure 1); (2) inhibits troponin, allowing contraction to occur, exhorting the anaerobic and oxidate processes, resulting in carbon dioxide and lactic acid production and oxygen consumption; (3) activates phosphorylase kinase which accelerates glycolysis; (4) is taken up in the mitochondria where it brings about uncoupling of oxidative phosphorylation with a fall in ATP production, resulting in inadequate energy needs of the sarcolemma membrane, so that enzymes, myoglobin, potassium and phosphate leak outward.

While the aforementioned theory explains the findings of those cases of malignant hyperthermia which display rigidity, we are somewhat at a loss to account for the non-rigid variant, and it has been suggested that the primary defect in these cases may differ from those in which rigidity is present.

Experimental data exist which support the hypothesis that the sarcoplasmic reticulum's inability to take up and store calcium is the underlying defect in MH. Kalow et al.¹⁷ studied isolated muscle strips in normal specimens and in three volunteers who had recovered from episodes of MH; two patients had displayed rigidity, while one had not. They demonstrated that halothane depressed calcium uptake by the sarcoplasmic reticulum in the two rigid patients but had no effect on the control muscles. They also demonstrated that the muscles from the two patients who had exhibited rigidity showed enhanced sensitivity to caffeine contracture, and that this effect was potentiated by halothane, as compared to the muscle specimens of the controls and the non-rigid patient.

Caffeine has long been known to cause a persistent contracture or rigor of muscle fiber, by enhancing the release and interfering with the rebinding of calcium ions by the sarcoplasmic reticulum, allowing for a rise in the calcium concentration of the sarcoplasm. It also has been known that procaine blocked this caffeine rigor in muscle because the charged form of the local anesthetic within the sarcoplasm antagonized the calcium influx into the muscle fiber.

Armed with this knowledge, Harrison¹⁸ wondered, if halothane and caffeine produced similar changes in sarcoplasmic reticular function, enhancing each other's action, then would procaine block the action of halothane as it did caffeine rigor? Also, would procaine block the effect of succinylcholine?

Working with susceptible Landrace pigs, he showed that procaine blocked the initiation of anesthetic-induced MH by both halothane and succinylcholine. Pretreatment with curare prevented the trigger action of succinylcholine—not the hyperpyrexia of halothane. In five pigs in which the syndrome was well established with the temperature in excess of $42^{\circ}C$ ($107.6^{\circ}F$), large doses of procaine led to ultimate relaxation of the rigor, and two pigs survived. Harrison suggested the administration of procaine IV—a loading dose of 30-40 mgm/kg, to be followed by a rate of 0.2 mg/kg/min, until muscle rigor relaxed. The use of an infusion of isoproterenol with EKG monitoring, was advised.

Moulds and Denborough¹⁹ demonstrated that procaine given at the height of contracture, in a halothane-potentiated caffeine contracture in normal human muscle, induced relaxation. They also showed that procaine reversed the contracture induced by halothane alone, in the muscle from a patient with an inherited susceptibility to MH.

There have been a number of case reports^{7, 20, 21} where procainamide was used as part of various therapeutic measures in successfully treating episodes of MH. Beldavs et al.⁷ infused 700 mgm of procainamide over the course of 8 minutes and within 19 minutes after the beginning of procainamide, the temperature fell from 112° to $98^{\circ}F$, a refractory tachyarrhythmia of greater than 200, slowed down to 112 beats per minute, and there was relief of the skeletal muscle rigidity. Noble et al.²⁰ infused 200 mgm of procainamide in 200 ml of 5 percent glucose in water over a 5 minute period and a second infusion of 200 mg procainamide in 1000 ml of 5 percent glucose in saline, with slowing of the heart rate and improvement in muscle rigidity. Brebner and Jozefowicz²¹ administered 100 mg boluses, giving 900 mg in half an hour. They observed a slowing in heart rate from 180 to 120, following the administration of 500 to 600 mg of procainamide and a subsequent slowing to 100 per min-

ute after a total of 900 mg had been infused; the temperature fell from 102.5° to 95°F.

We would now like to turn to some other observations that have been made in the field of MH, before considering the subject of therapy.

Isaacs and Barlow²² studied more than 100 members of a family which had suffered three deaths from MH, by means of serum creatine phosphokinase (CPK) estimations. They found a surprising number of abnormally high levels in many asymptomatic relatives, which was inherited as a Mendelian dominant trait with variable penetrance. They stated, "If one accepts the occurrence of malignant hyperpyrexia and abnormal serum creatine phosphokinase levels as manifestations of a muscle abnormality (subclinical myopathy), then it is possible that those asymptomatic patients with the highest levels of serum creatine phosphokinase are the greatest anaesthetic risks." The suggestion was made to screen all close relatives of known cases of malignant hyperpyrexia.

They also found a number of unexplained sudden deaths in this family and suggested that MH might be only one of several ways in which this potentially lethal trait expressed itself.

At this time, it is not certain that an elevated CPK correlates fully with susceptibility to MH. We are acquainted with a youngster who survived an episode of MH and months later demonstrated a normal CPK. There are documented cases of individuals known to be predisposed to the syndrome by family history and muscle biopsy, yet have normal CPK's. There can be variations in CPK values in different samples obtained from the same individual, and physical factors such as exposure to light and temperature may influence the values of CPK obtained.

There are many conditions²³ which are characterized by elevated CPK's, among which, are the following: paroxysmal myoglobinuria, hypothyroidism, muscle exercise, muscle hypoxia, acute myocardial infarction, massive burns and gas gangrene of muscle, intoxicated chronic alcoholics, polymyositis, muscular dystrophy and familial hyperkalemic periodic paralysis.

Nevertheless, the CPK remains one of the few available indices, easily determined, which may help flag down a potential disaster, and should be done on all individuals and families considered to be at risk—acknowledging the fact that there will be false positives as well as false negatives.

Zsigmond et al.²⁴ studied the creatine phosphokinase isoenzyme patterns in sera and skeletal muscle of three families of malignant hyperthermic patients. CPK is composed of three subfractions or isoenzymes, which are separated electrophoretically; they are: 1) the MM type or muscle isoenzyme; 2) the BB

type or nerve type; and 3) the MB or hybrid form or cardiac type.

In normal skeletal muscle homogenates, the MM-isoenzyme is predominant with a B:M ratio of less than 0.25, i.e. in normal skeletal muscle, less than 25 percent of the activity is due to the B subunit. The predominant isoenzyme in brain homogenates is the BB or nerve type, with a B:M subunit ratio of 4.5. The predominant BB-isoenzyme pattern is a consistent finding in foetal and newborn muscle, and it is not until the age of four that the adult pattern of predominant MM-isoenzyme is present.

It was noted that the isoenzyme pattern present in the concentrated sera (tenfold), reflected the skeletal muscle CPK isoenzyme pattern.

Zsigmond et al. found a marked predominance of BB-isoenzyme instead of the MM-isoenzyme on electrophoresis of both sera and skeletal muscle homogenates of the affected probands and their families. They suggested that the reversal of the normal isoenzyme pattern, or abnormal B:M ratio, might be a better indicator of the expected anesthetic difficulties, since it might better reflect the severity of genetic abnormality present in the skeletal muscle.

One explanation of the predominant BB-isoenzyme pattern is that muscle from the hyperthermic individuals may not have undergone normal, mature development with respect to CPK. A second explanation might be, that the BB-isoenzyme is continuously being released from the nerve ending supplying the skeletal muscle and that it may be caused by an abnormally high nerve: muscle ratio in the skeletal muscle of the affected individual. The BB-isoenzyme or absence of the normal MM-isoenzyme would act as an abnormal trophic factor which would affect the calcium storing properties of the sarcoplasmic reticulum.

The second explanation has found some support in the work of la Cour et al.²⁵, who studied a patient who had experienced MH, as well as his family. They noted hyperexcitability of the muscle fibers by electromyography which was thought to be due to a continuous denervation, as shown by their histological findings. The biopsy specimens revealed degeneration and regeneration of the intramuscular nerve fibers, with increased occurrence of end-plates and pronounced sprouting; the degeneration appeared to be superseded by an increased regeneration. Their observations might suggest a theory of a primary neurological defect with accompanying trophic changes in the muscle.

One of the patients thought susceptible to MH and studied histologically by Isaacs et al.²⁶, also showed suggested evidence of neuropathy with fibre atrophy and evidence of reinnervation.

While histopathological studies of muscle specimens of survivors of, and individuals considered susceptible to, MH have been relatively few, some authors^{26, 27, 28} have suggested that histological and histochemical examinations of muscle can point to a myopathy, even though no clinical signs of myopathy exist, and can identify the individual at risk. Some of the common findings have been: variability of fibre diameter—some mention increased numbers of small fibers, others note abnormally large fibers; increased central nuclei; and focal areas of fibre degeneration associated with marked lymphocytic infiltration. Denborough et al.²⁸ notes non-staining cores; Harriman et al.²⁷ mentions fibers with a “moth-eaten” appearance. Britt et al.²⁹, states that the above described structural changes are in no way unique to MH. While an editorial in *Lancet*³⁰ cautions that muscle biopsies can be misleading and asserts, “It is not unusual to see a few abnormal muscle fibers in a normal individual, so that it has to be proved that these abnormalities are more widespread in people susceptible to hyperpyrexia.”

It has been affirmed that in vitro pharmacological testing of muscle biopsies can readily identify individuals susceptible to MH. As has been mentioned, Kalow et al.¹⁷ demonstrated that muscle from survivors of MH showed increased sensitivity to caffeine contracture, and that contracture was enhanced by halothane. They could not evoke contracture by exposure to halothane alone. The isometric muscle contraction test would not appear useful for identification of non-rigid MH individuals, as their muscle develops a normal contracture in the presence of caffeine or caffeine and halothane, similar to control patients.

Ellis et al.^{31, 32} and Moulds et al.¹⁹, were able to demonstrate muscle contracture following exposure to halothane alone, in muscle specimens from patients susceptible to MH. Subsequently, Ellis and Harriman³³ proclaimed a screening test that would identify non-rigid MH individuals, as well (the rigid type being identified by halothane-induced muscle contracture). The test involves stretching the muscle strip at a constant rate, using a constant speed motor and measuring the resting tension developed. The length of the muscle is then increased by 30 percent, whereupon, the motor is stopped for one minute before being reversed, and a second measurement—the stress relaxation—is made. They have indicated a marked increase in both the resting tension and stress relaxation upon exposure to halothane, in non-rigid cases of MH, as compared to normal muscle.

More recently, Moulds and Denborough^{34, 35} have shown that individuals susceptible to MH have muscle with heightened sensitivity—as evidenced by muscle contracture—to halothane, caffeine, succinylcholine, potassium chloride, and temperature

change. They postulate that this pharmacological testing permits separation of susceptible individuals from those not at risk, in families of patients who have experienced MH.

It is hoped that in the near future, identification of individuals susceptible to both the rigid and non-rigid types of MH will be made possible by standardized testing which will be readily available in widespread centers, so that the Damoclean onus will be underscored where it applies and removed where it does not, regarding relatives and family members of patients who have suffered episodes of MH.

For our final topic, we wish to consider the subject of management of the syndrome of MH under several headings. If we are to make a dent in the unhappy mortality figures of this admittedly rare entity, it will only be by maintaining a high index of suspicion and anticipation and having a ready regimen of therapy which can be initiated immediately.

A. Anticipation

The “alert flag” should be raised when: there is a family history of anesthetic deaths; there is a history of unexplained muscle cramps; there are physical findings of muscle or musculoskeletal disease such as ptosis, strabismus, kyphoscoliosis, hernias, joint hypermobility, greater than normal muscle bulk—especially of the thighs; there is an elevated CPK with no obvious cause.

B. Early Recognition

If, following the administration of succinylcholine, rigidity follows—especially of the masseter muscles—instead of relaxation, the anesthetic should be terminated, the case canceled and the individual investigated by muscle biopsy and enzyme studies.

The following early signs and findings should always suggest the possibility of MH, especially if no other patent cause is noted: tachycardia or arrhythmia, especially of ventricular origin, tachypnea, flushing or mottling cyanosis, warm skin, excessive heat and blueness of the soda lime canister, dark blood in the surgical field, a rise of body temperature of more than 1°C.

C. Immediate Treatment

Once the diagnosis is made, the following measures should be initiated immediately:

- I. Cessation of all potent inhalation agents and muscle relaxants and terminating surgery (remembering the success of survivors where anesthesia was terminated within 10 minutes); change the rubber anesthetic tubes to new tubing, to avoid continued exposure to the lipid—soluble anesthetic absorbed by the rubber.

- II. Hyperventilate with 100% O₂.

III. Immediate drug therapy

1. Sodium bicarbonate (7.5 percent)—a stat loading dose of 4 ml/kg IV³⁶, has been suggested, and then in accordance with blood gas determinations (remembering acidosis is one of the very earliest developments and usually of an appreciable degree).

2. Procainamide—no agreed upon schedule; suggest 0.5 to 1 mg/kg/min, either in IV boluses or as a continuous IV (1 gm in 500 ml 5% D/W), with ECG monitoring, until there is improvement in the tachycardia or arrhythmia.

3. Diuretics—mannitol, 1 gm/kg IV; furosemide, 20-40 mg IV; to assist in flushing myoglobin out of the renal tubules and to prevent the hypernatremia secondary to the large amounts of sodium bicarbonate administered.

IV. Active and vigorous cooling

If possible, place the patient on a rubber sheet, effect immersion in ice and ice water; apply intragastric, rectal and wound cooling; administer iced lactated Ringer's and dextrose in water IV; direct fans over the patient, turn down the temperature in the room. Ryan et al.³⁷ recently reported that successful cooling of a case of MH with partial cardiopulmonary bypass (femoral artery to femoral vein). Chlorpromazine may serve as a hypothermic agent by producing peripheral vasodilatation and preventing subsequent shivering.

D. Monitoring

The following parameters should be monitored to gauge the progress of the syndrome:

I. Electrocardiogram

II. Temperature—rectal and esophageal

III. Blood studies—

1. Electrolytes and chemistries: Na, K, Cl, PO₄, Ca, Mg, BUN, glucose, serum creatine, enzymes—CPK, SGOT, LDH, SGPT.

Watch for hyperkalemia which may necessitate the administration of insulin and glucose; there may follow total body potassium depletion, which may call for potassium chloride.

2. Arterial blood gases—secure an arterial cannula; blood gases and pH may have to be monitored every 10-15 minutes initially, and corrections made accordingly.

IV. Central venous pressure

V. Urine—measure urine output and check for hemoglobin and myoglobin.

E. Late Complications

The following are complications which may appear later in the management of MH:

I. Hypothermia—following too vigorous cooling, with its attending arrhythmias, acidosis, etc.; attenuate cooling procedures as the temperature approaches normothermia.

II. Disseminated intravascular coagulation—may require heparin.

III. Acute renal failure—secondary to myoglobi-nemia; hemodialysis may be required.

IV. Pulmonary edema—secondary to excessive intravenous fluid and myocardial injury.

F. Miscellaneous Considerations

Lidocaine (Xylocaine®) is to be avoided, if its use is contemplated in the treatment of an arrhythmia, since it may enhance calcium leakage from the terminal sacs and compound the basic defect of this syndrome.

At this time, the use of steroids is not well delineated. Britt et al.⁸ has maintained that they were too often given in physiological dosage—too small to be effective.

We had occasion to administer 500 mgm of hydrocortisone to a patient in the midst of an acute episode of MH. The patient had been febrile for 50 minutes and had a temperature of 108°F, or more, for 15 minutes; the patient became normothermic within 10 minutes following the administration of the hydrocortisone. We must add that the patient was being vigorously cooled during this entire period. The previously mentioned patient reported by Beldavs et al.⁷, who received 700 mgm of procainamide, also received 1000 mgm of hydrocortisone immediately before and again after the procainamide; whether this contributed to the dramatic fall in temperature from 112°F to 98°F, can only remain speculative.

My own prejudice would be to administer hydrocortisone, in the dosage range of 1000 mgm, on one or more occasions.

G. Anesthesia for Individuals at Risk

Patients who are known to be susceptible to MH from survival of previous episodes, or family members held suspect, have been successfully anesthetized with the use of IV narcotics and nitrous oxide or neuroleptanalgesia (Innovar® and nitrous oxide). Barbiturates and non-phenothiazine tranquilizers, such as diazepam, as well as regional anesthesia, using procaine or tetracaine—avoiding lidocaine—are deemed safe.

We have successfully administered anesthesia to three survivors of episodes of MH: two were done with diazepam, fentanyl and a local anesthetic administered by the surgeon, while a third was done with Innovar® and nitrous oxide and oxygen.

We have attempted to present some highlights in an intriguing syndrome, where findings have often been

contradictory, whose etiology remains speculative, whose occurrence is attended with havoc and does not allow leisurely study, whose notoriety, nevertheless, has attracted world-wide interest and hopefully will lead to a complete understanding of this frequently lethal complication of anesthesia.

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Some Hazards of Anesthetic Management

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Abstract—Illustrative pathophysiologic states and untoward pharmacologic reactions emphasize how they jeopardize anesthetic management and endanger life. Ability of patients to tolerate anesthesia and surgery has always been a concern of anesthesiologists. Today their pharmacologic profile assumes vital significance. Many medications employed today increase the incidence of adverse reactions, and interactions, and frequently enhance existing dysfunction of vital systems. Awareness of their use is essential to the safety of anesthetized patients. Anesthesiologists solicit the cooperation of their medical colleagues to make certain that information concerning use of significant drugs is communicated to them prior to operation together with information about existing pathophysiologic states.

Essential requisites for safe conduct of anesthesia include thorough acquaintance with the physiologic status of every surgical patient, complete familiarity with the pharmacology of all drugs employed prior to, and during, anesthesia and the ability to select the proper agents and techniques of administration. It is therefore important that referring physicians be aware of those pathophysiologic states and the growing list of drugs, and combinations of drugs, that create major problems during and following anesthesia. This information is vital and should be communicated to the anesthesiologist when surgical patients are hospitalized. It is recognized that elective surgery should be postponed for at least three months after myocardial infarction, and that prolonged corticosteroid therapy can lead to demise unless supplementary doses are administered to combat the added stress of anesthesia and surgery. However, many subtle abnormalities and drug interactions are not generally recognized as being threats to the safety of anesthetized patients. The increasing number of drugs that produce adverse interactions between medications and agents employed for anesthesia make it essential that anesthesiologists be informed of all drugs the surgical patient has been receiving. Ultimate responsibility for detection, control or elimination of potential complicating factors rests with the anesthesiologist. When he is forewarned of existing hazards by his colleagues, optimal care is facilitated and prolonged hospitaliza-

tion due to unnecessary delays and serious complications can be avoided. Obviously, the best time to avoid trouble is before one gets into it.

Hoarseness

Hoarseness of more than three weeks duration is a real danger signal to anesthesiologists. Chronic hoarseness demands a thorough investigation and explanation of its etiology before general anesthesia is administered for emergent, or elective procedures. Although infection may produce hoarseness, benign or malignant tumors of the larynx and paralysis of a vocal cord are more common causes. Minimal irritation, inflammation or trauma to the glottic tissues of patients with laryngeal lesions can produce sufficient swelling, or edema, to completely obstruct an already compromised airway. This applies to all age groups, but is especially true of infants and children. Because their laryngeal and tracheal lumens are so small their margin of safety is minimal and severe respiratory insufficiency can develop with frightening rapidity. Patients with existing cardiac or pulmonary insufficiency who have laryngeal lesions are subject to the same sudden deterioration. When the cause of hoarseness is known one can eliminate the source before operation, or be prepared to avoid the dangerous effects of hypoxia, hypercarbia and anoxia. Hypoxemia and retention of carbon dioxide are as lethal as anoxia when not recognized and treated promptly. To assure optimal safety of patients with infection, trauma or malignant lesions of the head and neck, performance of tracheotomy and administration of anesthesia via this route is frequently required.

Chronic hoarseness should alert physicians to the possible existence of unrecognized, remote pathology which could cause major respiratory and circulatory problems during anesthesia. It is an early symptom of intrinsic tumors of the larynx, but is delayed, or absent, with extrinsic carcinoma.¹ When it is due to paralysis of a vocal cord it may be indicative of remote disease, compression, or damage, involving either the vagus or one of the recurrent laryngeal nerves anywhere along their courses. This type of hoarseness is caused by tumors of the mediastinum, bronchogenic or esophageal carcinoma with metastases, aortic aneurysms, left ventricular hypertrophy due to congestive or congenital heart disease or injury to a nerve during intrathoracic procedures, neck surgery or trauma.² Determination of the etiology of chronic hoarseness in advance of elective operations promotes performance of corrective measures, and facilitates selection of the optimal technique of administration of anesthetic

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agents most likely to avoid respiratory complications for individuals operated upon in emergency. Otherwise the threat of respiratory insufficiency or obstruction, during or following general anesthesia, could be of the magnitude that would influence the anesthesiologist to insist on postponement of the procedure.

Polycythemia

Polycythemia is a disease entity that causes serious complications during and following anesthetic and surgical procedures when it is not detected and managed judiciously preoperatively. Any patient with a ruddy complexion, a history of headaches, dizziness, dyspnea, cyanosis, hypertension, nasal hemorrhages and an elevated hematocrit should be investigated for hypervolemia. Primary polycythemia (erythremia) is characterized by an increased volume of erythrocytes and thrombocytosis. The erythrocytosis of secondary polycythemia is found in patients with chronic pulmonary disease, congenital or acquired heart disease, renal or adrenal tumors, adrenocortical hyperplasia and cerebral hemangioblastoma.^{3 4} All the tissues and organs of individuals with marked polycythemia are engorged with blood. Hypervolemia places an added load on the circulatory and respiratory systems and favors development of pulmonary congestion, cardiac failure, pulmonary edema, cerebral edema and cerebral hemorrhage. Profuse, generalized bleeding complicates and prolongs performance of operative procedures. Increased viscosity of the blood slows circulation, and together with thrombocytosis and, or, dehydration, contribute to a high incidence of venous thrombosis, coronary and cerebral thrombosis.

Administration of general anesthesia to unrecognized polycythemics leads to many problems. The mucous membranes of the entire respiratory tract are engorged, spongy and hypersensitive. Obtundation of reflex activity is rendered difficult. Induction of anesthesia is prolonged by coughing, straining and onset of bronchoconstriction is not uncommon. Insertion of an airway, or endotracheal tube, frequently exaggerates the above mentioned problems. Bleeding into the nasopharynx may be encountered, especially if the nasal route has to be employed. A cape-like distribution of cyanosis of the head, neck and shoulders is characteristic and is not relieved by administration of high concentrations of oxygen. Hemorrhage into incised areas in excessive, renders hemostasis difficult and enhances development of hematoma.

Because of the hazards introduced by polycythemia it is important to reduce the circulatory overload before anesthesia and operation. Whenever feasible, performance of controlled phlebotomies prior to elec-

tive procedures are recommended to reduce red cell and total blood volumes to as near the normal levels as possible. This avoids onset of abnormal respiratory and circulatory function during anesthesia and eliminates the likelihood of serious morbidity due to excessive hemorrhage, hematoma, congestive failure, cerebral hemorrhage, coronary or cerebral thrombosis. Venesections of 500 cc each can be performed at least twice weekly, taking precautions to maintain hydration. Reinfusion of the patient's plasma assures maintenance of fluid balance. Use of regional anesthesia, including spinal, is advisable whenever practical, especially in emergent situations and when reduction of the excess blood volume is not feasible.^{5 6 7}

Pheochromocytoma

An extremely high mortality rate accompanies administration of anesthesia to patients not suspected of having pheochromocytoma. Its seriousness is emphasized by the fact that it is curable if recognized and managed properly. Its detection is directly proportional to one's awareness of its possible presence. Patients with moderate to severe hypertension of the intermittent, or sustained variety, who complain of headaches, nervousness, excessive perspiration, palpitations, loss of weight, who have hypermetabolism and an elevated fasting blood sugar, warrant investigation for this tumor. The untoward effects of excessive circulating catecholamines are effectively controlled by alpha adrenergic blocking agents, phentolamine and dibenzylamine. Dibenzylamine (40 to 100 mgms., q. 12 h.) has a more sustained action than phentolamine and is preferred in preparing these patients for surgery.⁸ As the vasoconstriction is overcome vigorous volume replacement will be necessary since these patients all have contracted intravascular volumes. Resection of the tumor can be undertaken with safety after the patient has been asymptomatic for one to two weeks. Anesthetic management for elective removal demands that the anesthesiologist be thoroughly prepared to avoid, or control, all complications that may be encountered. Moving the patient to and from the stretcher and positioning him on the operating table, must be done with extreme care to prevent stimulation of the tumor and release of catecholamines. Intra-arterial pressure, central venous pressure and cardiac action should be monitored. This is especially important during induction of anesthesia, endotracheal intubation and manipulation of the tumor. Anesthetic agents such as cyclopropane which potentiate catecholamine-induced sympathetic activity and cardiac arrhythmias must be avoided. Some authors avoid administration of halothane for the same reason. Use of pentothal (thiopental), nitrous oxide and oxygen supplemented by succinyl-

choline meets these requirements. Others combine this technique with continuous epidural analgesia,⁹ but this may result in stimulation of catecholamine production while the regional procedure is accomplished. Neuroleptanalgesia or local infiltration by the surgeon are probably better methods of supplementation, if needed. Recent work has suggested that Ethrane may be a valuable agent since it does not sensitize the heart to catecholamines but it is a potent, easily controllable agent. Phentolamine must be immediately available to control hypertensive episodes, as well as lidocaine and propranolol for management of arrhythmias. Because of the pronounced vasoconstriction caused by circulating catecholamines, these patients may have sizeable deficits of blood volume that make it necessary to administer adequate amounts of fluid and blood to prevent onset of severe hypotension following ligation of the blood supply and removal of the tumor.

Whenever hypertension, tachycardia and excessive perspiration develop during any operation anesthesiologists should be alerted to the possible presence of pheochromocytoma. Keen awareness of the etiology of hypertensive crises and the availability of phentolamine for immediate use are life saving in these situations. Otherwise prolonged, severe hypertension, extreme tachycardia, cardiac arrhythmias, pulmonary edema, cerebral edema, any hyperpyrexia may prove fatal.

Aspirin

Many clinically effective drugs are widely used with emphasis placed on results to be achieved while overlooking their potential to produce untoward reactions. Acetylsalicylic acid, monoamine oxidase inhibitors, anti-depressants, tranquilizers and diuretics are examples that emphasize the adage, "no drug has a single effect!" It is established that excessive bleeding during surgery may be induced by the capacity of aspirin to inhibit agglutination of platelets.¹⁰ Normally spontaneous hemostasis is accomplished by vasoconstriction, progressive occlusion of vessels by aggregation of platelets and formation of fibrin. Aspirin may prevent the second step of this process and cause hemorrhage. The lack of adhesiveness induced is believed to persist for virtually the entire lifespan of platelets exposed to the drug. Ready availability, indiscriminate use and lack of precautionary information concerning the dangers of aspirin constitute a real source of morbidity and mortality. Daily ingestion of large doses for any painful condition, such as arthritis, is hazardous, especially for surgical patients, or those involved in accidents. In addition to those requiring other types of surgery, many arthritics are submitting to corrective orthopedic procedures such as total hip and knee replace-

ment. Unless the analgesic is stopped one to two weeks prior to operation profuse bleeding may be encountered. In our experience this complication has developed during performance of hysterectomy, gastrectomy, craniotomy for metastatic carcinoma, total hip replacement and following total knee replacement for which a tourniquet was employed. All patients with a history of chronic pain should be questioned about aspirin therapy to make certain that its use is discontinued 7 to 10 days prior to surgery.

During a pre-anesthesia visit a seventy-year-old arthritic scheduled for total hip replacement admitted ingesting twenty to thirty grains of aspirin daily for a prolonged period. Further questioning revealed that none had been taken for ten days. During the procedure the surgeon's comment concerning his difficulty in controlling persistent, generalized bleeding prompted the anesthesiologist to review the medication chart. It was discovered that acetylsalicylic acid had been administered within thirty-six hours of operation. In addition the blood being used for replacement therapy had been donated by the patient prior to admission while she was ingesting large amounts of aspirin. When it became evident that an aspirin induced platelet defect was the probable cause of the hemorrhage, the second of four auto-transfusions was being administered. Two additional auto-transfusions were required to maintain cardiovascular stability while waiting for fresh blood and harvested platelets to become available. Effective control of the bleeding was not achieved until a unit of fresh blood and an infusion of platelets were administered in the recovery room. A hematoma developed postoperatively but the wound healed normally following its aspiration. Whenever this type of hemorrhage is encountered surgeons and anesthesiologists must consider that an aspirin induced platelet defect may exist.

Monoamine Oxidase Inhibitors

MAO inhibitors are another dangerous group of drugs which create major problems for anesthesiologists. Fortunately they are not widely used, but some are employed in the treatment of hypertension and depression. Pargyline (Eutonyl) is an effective antihypertensive, and trancylpromine (Parnate) is used for some depressive states. The effects of MAO inhibitors are prolonged and tend to be cumulative, accounting for two to fourteen days of activity after cessation of use.¹¹ They inhibit the principal enzyme engaged in the metabolism of catecholamines and many drugs employed in anesthesia, including barbiturates, narcotics and meperidine-type synthetic narcotics. Patients receiving a MAO inhibitor who require anesthesia may develop severe hypotension, but hypertensive crises occur more frequently. Metabolism

of the catecholamines released in response to the stress of anesthesia and surgery is blocked, hence accumulated norepinephrine elevates blood pressure to dangerous levels. Injudicious management of MAOI-induced hypotension also leads to marked hypertension because potentiation of vasopressor activity is another characteristic of these drugs. Such episodes are particularly dangerous for elderly patients.

Many depressant drugs used in anesthesia are inactivated by liver microsomal enzyme systems. Because of their capacity to depress these systems, MAO inhibitors, which are normally CNS stimulants, become potentiators of CNS depressants.¹² A major concern of anesthesiologists is the interaction of MAO inhibitors with meperidine type narcotics, such as fentanyl (sublimaze). This short-acting, extremely potent agent is widely used for neuroleptanalgesia. Since MAO inhibitors slow the metabolism of these drugs, their actions are enhanced and onset of profound hypotension is common. Effects of this inhibition persist for the life-span of the enzymes and two weeks are required before new enzymes are produced. Hypotension, together with potentiation of the action of CNS depressants, creates an unstable physiologic state which contraindicates administration of anesthesia till the effects of monoamine inhibition disappears.¹³ Even small doses of meperidine, or fentanyl, will cause severe hypotension when administered to these patients, or to anyone from whom the drug has not been discontinued for at least two weeks. We recently postponed an elective operation for a healthy, young male who was receiving a MAO inhibitor. After returning to his room the presence of pain led to the ill-advised administration of 50 mgms. of Meperidine. The persistent hypotension that followed could not be explained on any basis other than an untoward interaction of the two drugs. Irrespective of whether an operation is an elective or emergent procedure, everyone concerned in the care of patients receiving one of these drugs should be informed of the hazards involved. Otherwise extreme fluctuations of blood pressure will occur which may not be managed properly.

Enzyme Inducers

Clinicians must also be aware that many drugs stimulate the production of hepatic enzymes, thereby increasing the rate of their own metabolism, that of other drugs, or both. Hundreds of agents including analgesics, anesthetics, anticoagulants, anti-inflammatory drugs, hormones, sedatives and tranquilizers are enzyme inducers.¹⁴ Enzyme-induction usually decreases the intensity and duration of activity because metabolites are generally less active than the drug itself. However, should the metabolite be more potent than the parent drug its activity is enhanced

and untoward effects result. An excellent example is phenobarbital which stimulates the metabolism of many drugs including digitoxin, diphenylhydantoin (Dilantin), glucocorticoids and oral anticoagulants. A typical adverse drug interaction due to enzyme induction may occur when coumadin and a barbiturate are used concurrently.¹⁵ Metabolism of the anticoagulant is enhanced while the patient receives the barbiturate, making it necessary to use larger doses of coumadin. Unless the dose of coumadin is reduced, discontinuation of the barbiturate may result in hemorrhage at a later date due to the increased level of anticoagulant in the plasma. Similar results are produced by other enzyme inducers, such as meprobamate (Equanil, Miltown), glutethimide (Doriden) and diphenylhydantoin (Dilantin). Of particular significance to anesthesiologists is the fact that many agents they employ are induced by other drugs; that patients receiving enzyme inducers may require larger amounts of some anesthetics, and that the toxicity of many agents is related to their metabolic products. A strong history of enzyme induction may be a contraindication to the use of halothane or methoxyflurane.

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Artificial Insemination

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Artificial insemination in animals dates to the second century A.D., and is mentioned in Arabian sources of the 14th century. The first attempt reported in humans using the husband as the donor was described in the late 18th century. Not until 1890, in the greatest of secrecy, was artificial insemination using an anonymous donor performed.¹ Since then an ever increasing number of procedures have been performed in an atmosphere of growing acceptance. The recent rapid decline in adoptable infants has accelerated this trend.

There are two types of artificial insemination. The first using the husband's semen (AIH) is indicated when the male partner cannot deposit sperm into the vagina during intercourse or if he is subfertile and placement of semen into the uterus or cervix or both with or without some concentration technique is thought to increase chances for fertility. Instances in which poor cervical mucus or sperm penetration have prevented conception have also responded to intrauterine insemination. Donor insemination (AID) is indicated following failure of AIH, when there is absolute male infertility or when the male partner would be an unacceptable father for genetic reasons.

Specimen

AIH: Since the majority of AIH's are performed because the number of sperm per milliliter is low, a variety of concentration techniques have evolved. These include (1) centrifugation of a single specimen, (2) fractionating, freezing and combining several specimens for use in a single insemination and (3) the split ejaculate technique. In the latter the ejaculate is collected in two parts because very frequently the concentration of motile sperm in each part is substantially different. The two specimens are examined and the best is used for insemination.

AID: As in specimens for AIH, the sample is best collected by masturbation as soon before use as possible and placed in a clean container. Donors should be of proven fertility with a normal semen analysis, and matched with the husband for physical characteristics. They should be free of a history of congenital and venereal diseases. If possible, blood type of the donor and husband should match. If the wife is Rh- care should be taken that the donor is Rh- as well.

Specimens frozen in liquid nitrogen have been successfully used for a number of years although the fertility rate is somewhat less than with fresh specimens. In our clinic we generally use fresh specimens. We should state that the identity of the donors and recipients not only is never divulged but that no records relating the two are kept. It would, therefore, be impossible for either a donor or recipient to discover the identity of the other.

Technique

With either AID or AIH the specimen may be placed into the uterus, cervix or vagina using a syringe and polyethylene tube. Intrauterine insemination (never more than 0.3 cc or severe cramping and/or anaphylaxis may occur) has been reported to increase fertility in some cases and is indicated when poor sperm transport across the cervical mucus is thought to be the cause of the infertility. Our usual technique in AID and AIH is to place as much of the specimen as possible into the cervix and the rest into the vagina. We then have the patient remain supine with hips elevated for about 15 minutes. The speculum is often left in place with the cervix in the pool of semen.

Timing

The greatest difficulty in performing artificial inseminations is coordinating the insemination with ovulation. For this reason a thorough knowledge of the patients' menstrual cycle and previous basal body temperature (BBT) charts are important. Clomid, human chorionic gonadotropins, and estrogens have all been used to regulate the timing of ovulation. During the months in which an insemination is to be performed, taking of the BBT is mandatory for timing purposes. We have found that 2 inseminations per month, one on the day before and the other the day after the expected date of ovulation provides the best result.

Results

AIH Reports on the success of AIH vary widely. Success probably has more to do with the original quality of the semen specimen than with the technique used. In general we feel that with AIH there is some enhancement of the expected fertility rate, but that this enhancement is not large.

AID Results with AID (assuming that the woman has no discernable pathology) have been excellent. Over 70 percent of the women beginning AID in our clinic conceive, usually within the first 3 months, al-

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though we feel at least 6 months of well timed inseminations is a fair trial. While AID does not guarantee a normal infant studies have shown that infants born with AID have at least as good, if not better chance of being healthy when compared to other infants. Evaluation of couples who have had a successful AID reveals the relationships to be remarkably stable. Divorce rates in these couples for example are far less than the general population.²

Decision

The decision to begin AIH is generally not difficult and most couples enter into this phase of treatment quite easily. The decision to begin AID however is usually more troublesome, and often requires time, much thought and discussion to be reached.

At the junction in the infertility evaluation when AID is offered, the couple often has the choice to 1) remain childless, 2) adopt or, 3) initiate AID. Although the number of factors influencing this decision must be vast, little information is available as to how and why most couples make their decision. If the couple chooses AID we try only to determine if they are relatively comfortable with their decision and to discuss beforehand some of the possible conflicts they may have. We do not as in some clinics demand prior psychological evaluation as the value of this remains unclear. Most of our couples and most reported in the literature have handled the emotional aspects of AID

quite well. After a successful first pregnancy we have a number of couples returning for a second AID child.

Legality

To date the performance of AIH has not presented any known legal difficulties. The status of AID, however, remains unclear. In Connecticut AID is not recognized by the law. Since the identity of the donor is unknown and since the husband is not the actual father, the paternity of the infant is in question. For this reason it has been advised that the husband adopt the infant or to name it specifically in a will. This, however, is unacceptable to most couples since they often require absolute secrecy about the procedure. Our feeling at present is for the husband and wife simply not to discuss the manner of conception with the delivering obstetrician. This will allow the obstetrician to write the husband's name on the birth certificate as father of the baby which he would do in any routine delivery. To date we have not had any difficulties in this area.

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Acute Anxiety Reaction Secondary to Food Allergy

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Psychological aberration as an allergic response has been noted by K. E. Moyer, 1975,¹ to be a well documented phenomenon and may affect the nervous system directly. Moyer theorizes that the allergens probably cause a non-inflammatory swelling of the brain perhaps making neural areas that produce aggression more sensitive or deactivate areas that normally inhibit aggressive behavior. The author indicates that such a diagnosis is made by elimination of the suspected irritant from a person's environment, further noting that it may be more that coincidence that both Benadryl and Dexedrine are both effective in minimal brain dysfunction and allergy. In recent years Solomon, 1973,² Wilken-Jensen et al., 1970,³ Weiss et al., 1971,⁴ and Campbell, 1973,⁵ have made us increasingly aware that foods and combinations of foods may produce psychiatric symptoms. The following is a case report of a patient with a four year

history of acute recurrent anxiety reactions with bouts of depression who was treated with corticosteroid tablets for an eczematoid dermatitis and who coincidentally responded by clearing of both conditions.

Case Report

J.D., a twenty-year-old white male, presented with a history of an eczematoid dermatitis on the back of the neck of four months duration. A history of acute recurrent anxiety episodes was noted to date back to 1971. Also, a history of intermittent diarrhea, belching, flatulence, and noisy bowel sounds was noted. The anxiety symptoms were characterized by feelings of diffuse fear culminating in panic attacks, fear of "I might hurt myself," and fearful expectation of impending doom. The anxiety reactions were accompanied by the above listed bowel symptoms plus sweating, cold wet palms, fatigue, weakness, palpitations, tension, ambivalence and depression, the former symptoms appearing in recurrent short bouts lasting a few seconds to several minutes and the depression being an overall background, longer lasting

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symptom. The depression symptoms followed the anxiety attacks and were characterized by uncontrollable crying spells and suicidal ruminations. One incident in January, 1971, involved syncope, erratic motor behavior, and subsequent amnesia of the incident, after ingesting a meal of pork chops, vegetables and beer in a restaurant, the incident providing a recurrent worry to the patient.

Consideration of manic-depression syndrome with anticipation of future breaks with reality were made by a psychologist who recommended psychiatric treatment for the patient. At the time the patient was so debilitated by recurrent anxiety attacks followed by depression so as to unable him to complete semester course work at college. Continuation in school was questionable without continued psychiatric or psychological treatment care, which involved several non-convulsive electro-stimulation treatment, oral thorazine tablets, and one electric shock in 1971. Questioning of the patient did not reveal any indications that any of the patient's symptoms were caused by the Thorazine which he had received. Also the anxiety symptoms always preceded the Thorazine medication and were only given a few days during the attack. The patient indicated at this time recurrent symptoms seemed to occur after smoking, and upon retrospective questioning, he revealed that he usually smoked after eating. Following an acute anxiety attack on August 16, 1974 which then turned into acute depression with suicidal threats the patient received another electric shock treatment and was then placed on Elavil 50 mg. at bedtime and 25 mg. three times a day. He was then on this medication with some changes in dosage up until the time of February 1, 1975 with no apparent side effects.

The patient was treated for the eczematoid dermatitis on February 1, 1975 with triamcinolone (Aristocort) corticosteroid tablets, four mg. daily in the morning for ten days with concomitant clearing of both the eczematoid dermatitis and the recurrent psychological symptoms. Thereafter the triamcinolone tablets were given every other day in the morning pending further investigation. Suspecting food allergies to be present, a Lopapa Institute RIA (Radioactive Immune Assay) blood serum food allergy test* of food panels A, B, C, and D was done showing a multiplicity of three and four plus reactions (on a scale of one to four) to numerous foods including malt, fish, milk, pork chops, seafood mix, coffee, tea, oats, lettuce, apples, berry mix, citrus mix, peaches, plums and pears. On April 2, 1975 the corticosteroid tablets and the Elavil tablets which had been pre-

scribed since August 19, 1974 were discontinued and an elimination diet was instituted resulting in complete remission of bowel and psychological symptoms.

However, on May 1, 1975 after eating a tomato the patient experienced a forty-eight hour period of intermittent diarrhea, belching, flatulence, weakness, fatigue, anxiety, tension, depression and phobias. The patient, on follow-up on August 2, 1975, has been symptom free on an elimination diet only.

Discussion

In conclusion, this patient's psychological symptoms both of the anxiety reaction and the bouts of depression cleared following treatment with corticosteroids and subsequently, after finding food allergies on an elimination diet only. The depression reactions could be secondary to his acute anxiety symptoms which did not respond to treatment or were a part of the allergic reaction, but the anxiety symptoms appeared to be part of the allergic reaction and were the predominant feature of the allergic reaction. Patients whose psychological symptoms clear when treated with corticosteroids for these and other ailments can be suspected to have a food allergy cause for the psychological symptoms, especially when bowel symptoms are coincident. Additionally, Campbell, 1971, has shown that symptoms other than enteric are common and should be considered in food allergy induced psychiatric symptoms such as concomitant nasal symptoms of frequent colds, sore throats or nasal congestion, hives, headaches, vertigo, weakness, seizures, fainting spells, neuritis, numbness and myalgia. Blood serum tests for food allergies are now available which are highly accurate, necessitate but a single blood sample, and are advisable to be done in such instances. Reasonable suspicion for this underlying cause and a careful retrospective history can be of use in detecting food allergy caused anxiety reactions and depression symptoms.

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Astley Cooper of Guy's Hospital

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In 1951, Clement Price-Thomas was knighted after carrying out a thoracotomy on King George VI. One hundred thirty years earlier, Astley Cooper had received the same honor after removing a sebaceous cyst from the head of George IV. It is an illuminating commentary on the respective states of the art of surgery at these two periods of time that the type of operation performed by Cooper carried with it a mortality and morbidity roughly equivalent to that done by Price-Thomas. Cooper, the most self-assured of surgeons, said at the time, "I was thunderstruck and felt giddy at the idea of my fate hanging upon such an act,"¹ and spent many a moment of disquiet until the danger period from the dread hazard of erysipelas had passed.

A proper introduction to the man remembered most for his eponymic ligaments in the breast and groin should place him relative to his contemporaries and to the age in which he lived. Lord Brock, himself an eventual successor to Cooper's surgical crown at Guy's Hospital, had this to say in 1952: "At a time when London was the best known surgical center in the world, Astley Cooper was its greatest surgeon, and today, one hundred years after his death, he still ranks as one of the great surgeons of all time."² In the word surgeon, Brock included practitioner, anatomist, researcher, author and teacher—the complete surgeon as we still formulate the ideal in 1976.

The history of Western thought seems to be dotted with the names of the progeny of clergymen, and that of Astley Paston Cooper is yet another punctuation mark in the narrative. However, far from being the archetypal proud but poor English cleric, Astley's father was well endowed with inherited money, and was himself the son and brother of well known surgeons. The younger Cooper became known as a bit of a ne'er-do-well adolescent playboy who, because of his charm and good looks, seems to have gotten away with a few stunts that might have caused serious trouble for other boys. His uncle was Senior Surgeon to Guy's Hospital, and our young rogue was much impressed with the spellbinding tales he heard of the good life provided by the social world of the London medical set. Astley's own explanation for his eventual choice of profession, however, points to a more high-minded motivation—he describes the death of a foster brother due to the inadequate care of a lacerated popliteal artery and states, "I was directly convinced how valuable a member of society a well informed

surgeon must be, and how great a curse an ignorant surgeon was."³

The plain fact was that at the age of 16, this charming, glib-talking hell-raiser had shown no particular aptitude for, or interest in, anything else. No wonder his parents leaped at the idea when he himself suggested that he be apprenticed to his uncle at Guy's Hospital.



Figure 1

Sir Astley Cooper, at the age of 45, by Sir Thomas Lawrence. This portrait was commissioned as a tribute by Cooper's students and hangs in the Royal College of Surgeons, in Lincoln's Inn Fields.

During the first few months in London, Cooper indulged his every whim for the high life. He fell in with a group of similar-minded young dandies and proceeded to drink deeply of the pleasures of the big city. But by the end of only four months, the dissipation came to an abrupt halt, and Astley Cooper became, for the remainder of his life, the dedicated mature scientist, clinician and teacher so highly honored in his own day and by subsequent generations. Two factors, one leading from the other, caused the metamorphosis. The first was his decision to change his apprenticeship from his uncle to Henry Cline, surgeon to St. Thomas Hospital. He had become so impressed with Cline's scholarliness, surgical skills

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and dedication that he determined to leave his uncle and train literally across the street at St. Thomas. The second decisive factor was his introduction, via Cline, to the lectures of John Hunter.

Describing John Hunter as a dreadful lecturer would be to understate the magnitude of his oratorical inability. He spoke in abstruse sentences, used terminology few could understand, and cared not at all whether his audiences could or could not follow his tortuous rhetoric. In addition, he was constantly changing his ideas as his own experience and new dissections dictated: he often contradicted in one series of lectures what he had said in the last, a form of pedagogical heresy in that day. He was unpopular as a teacher, and the constant butt of professional insults. Not, however, by Cline, who clearly recognized Hunter's flame of genius, quickly converting young Astley Cooper as well.

There are a number of striking similarities between the professional lives of Hunter and Cooper. Both, for example, after an initial period of dissipation in London, the former in the barrooms and gutters and the latter in more elegant surroundings, were never again the same men once the fascination of anatomy and surgery had seized them.

Each was noted for an adamant refusal to believe a thing unless he himself had shown it to be true by his own dissections or experiments. Except to the extent that Cooper followed Hunter's teaching, neither man



Figure 2

Entrance to Guy's Hospital, as it looked in Cooper's day. German bombs destroyed the wing at the left during the London blitz, leaving the statue of Miser Guy in the center of courtyard untouched.

ever referred to the works of others, but functioned as if no other surgical scientists ever existed. Both were capable of carrying inhuman workloads year after year and never seeming to tire of constant study. But Cooper was a handsome, articulate, polished gentleman of patrician birth, and Hunter was very much the opposite, on all counts.

At St. Thomas', Cooper began, while still a student, the animal experiments that later led to his famous group of aneurysm ligations. His progress in study

and research was rapid: by the time he went to Edinburgh for part of his fourth year of training, he so impressed the medical faculty that he was offered the presidency of the Royal Medical Society—at the age of 19! However, on finishing his studies he began his practice, only to do poorly to the extent that in 1799, after five full years, his income from that source was only 610 pounds.

The big change in Cooper's fortunes occurred in 1800, when he was chosen to succeed his uncle at Guy's Hospital, an opportunity that ushered in the great years of his career as a practicing surgeon. He began to pursue a frantic pace of practice, research and teaching. His daily schedule began at 6 a.m. with dissections until 8 at home, followed by seeing indigent patients without charge. After breakfast he would treat private patients until 1 p.m., at which time he would have to push his way through those remaining to get to his carriage, which took him to Guy's. There he usually made ward rounds until 2, accompanied by large numbers of students. He would then lecture and operate, sometimes concomitantly, tour the dissection rooms, and at half past four begin making a tour of house calls lasting until seven. A quick dinner at home was followed by another lecture and more house calls, and then to bed at midnight. In 1815 his income amounted to 21,000 pounds, approximately \$100,000 at the contemporary rate of exchange, an incredible figure considering the purchasing power of the early nineteenth-century pound. Cooper pursued this relentless pace for some quarter of a century, and even after becoming president of the Royal College of Surgeons in 1827, he continued his private practice and his researches, retiring only from hospital work and teaching.

Of all of the contributions of this master-surgeon to the science of healing, his first major work remains his greatest, the publication in 1804 of his study on inguinal hernia, and its companion-piece on femoral, umbilical and rarer types in 1807. These works brought order out of chaos and pointed out certain anatomical facts which completely changed and clarified the understanding and conception of these areas. Although Ambroise Paré had called the problem of hernia to the attention of the medical world more than two centuries earlier, most hernia operations were still being done by the so-called "Rupture Doctors," untrained technicians who, like the infamous "Bone Setters," often caused more disease than they alleviated. It was after Cooper's work that herniotomy most properly fell into the realm of the surgeons.

A brief catalogue of some of the more notable, but lesser known, of Cooper's contributions will suffice: he proved the existence of dislocations of the hipjoint, which many surgeons had, until then, felt did not

occur; he first described the transversalis fascia; he popularized the "heel-in-the-axilla" method for reducing a dislocated shoulder; he showed by dissections that poor blood supply to the proximal fragment explained the high rate of non-union of intracapsular femoral fractures; he proved that vas ligation does not result in testicular atrophy, as previously supposed; he showed that perforation of the ear drum did not destroy hearing, and, in fact, sometimes improved it; he contributed greatly to contemporary understanding of the anatomy of the thymus and thyroid glands; his descriptions of the suspensory ligaments and lymphatic drainage of the breast have remained little altered to the present day.

The volume of Astley Cooper's immense practice, as well as his unique anatomic ability and scientific approach to clinical problems resulted in his being called by his peers, "the Prince of Surgery." However, although Cooper's fame and vast income came from his clinical surgery, and although his memory has been kept alive by his publications, perhaps his greatest satisfaction came from his role as a teacher. He himself states that he educated 8,000 surgeons. It was Cooper who translated the obscurities of John Hunter to a generation of students. The dry and dusty lectures of his predecessors was replaced by an exciting style, illustrated by patients, specimens, dissections and drawings that made him the greatest surgical teacher in Europe at the same time that he was also its greatest surgeon.

A contemporary describes the scene in the lecture hall as follows: "A few moments before two, Astley Cooper came briskly through the crowd, his handsome face beaming with delight and animation . . . loud and continued greetings most truly declared the affectionate regard his pupils had for him. His clear silvery voice and cheery conversational manner soon exhausted the conventional hour devoted to the lecture; and all who heard him hung with silent attention on his words; the only sounds which broke the quiet being the subdued scratching of the note takers . . . He was one of the most attractive teachers I ever heard; and as he only talked of what really he knew from his own experience, what he taught was implicitly trusted."⁴

It is always interesting, and often rewarding, to speculate on the factors that initially stimulate an investigator to become involved in the specific area in which he achieves his greatest renown. In Cooper's case, the scent is sure and the trail is short. The abdominal wall of the great authority on hernia betrayed its owner in not one but two defective points. One element of the double cross was centrally located, in the umbilicus, and for this the father of hernia surgery wore a homemade truss all of his life. The other was a

right inguinal hernia, from which the fine steel of contemporary British scalpels remained equally remote. Young Astley discovered the groin defect while studying with Cline, and wore a truss constantly for six years, resulting in the eventual disappearance of the bulge. When he died, he left specific instructions that his right inguinal canal should be carefully examined. The prosector discovered dimpling of the peritoneum, which led into a "minute serous canal . . . being the remains of a congenital inguinal hernia."⁵ This confirmed, albeit post-mortem, Cooper's own clinical impression that in some rare cases it is possible to cure a congenital hernia by constant apposition of its walls by means of a truss.

Astley Cooper was never a modest man, and in his later years he even developed a kind of dogmatism and certainty about his own opinions that tolerated very little disagreement. He came to expect that his recommendations in professional matters would always be carried out. Because success came so easily to him, he was not accustomed to having his authority challenged, and it was the bullheadedness of his career's late afternoon that resulted in the founding of the Medical School at Guy's Hospital.

Although surgeon to Guy's, the students taught by Cooper were enrolled at St. Thomas', Guy's not having its own school. In 1835 Cooper resigned as lecturer, but the governors of the school refused to allow him to appoint his own successor. He became furious, and determined to establish a new medical school across the street. Within a year the school had been founded, and most of the St. Thomas students had resigned to enroll in it. As a result St. Thomas went into an era of decline from which it did not emerge until a change of venue had occurred and fifty years had passed, a period during which Guy's became one of the great medical schools of the world.

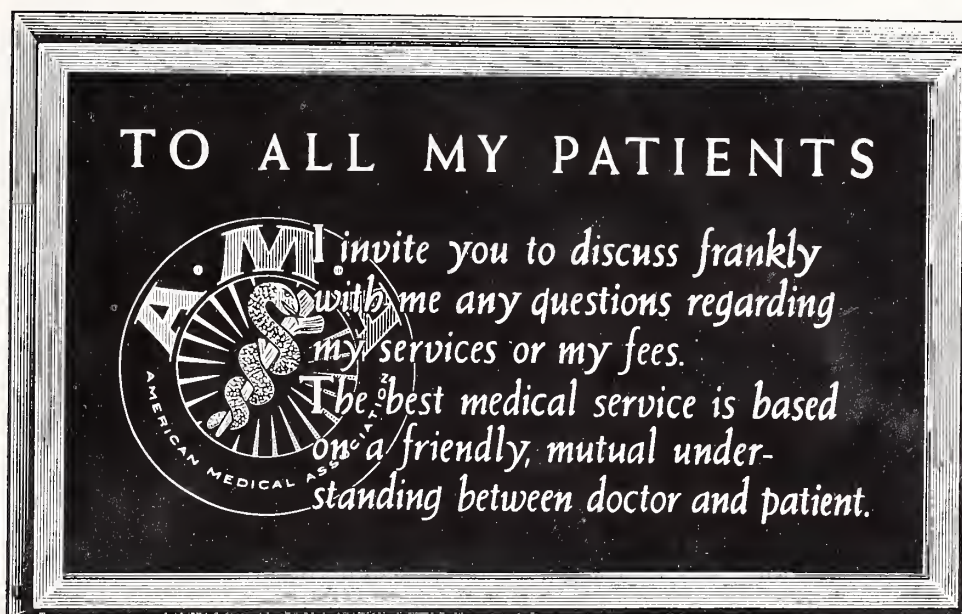
In 1840, Astley Cooper began to suffer from dyspnea on exertion, and by early the following year was in frank congestive heart failure. On February 12, 1841, surrounded by family and friends, he died in pulmonary edema, and with his last intelligible words he blessed those around him. He was buried in the crypt beneath the chapel at Guy's Hospital, where one day, almost twenty years ago, while wandering around the old buildings, I came across his tomb and there began the fascination with the career of this illustrious predecessor who so deservedly had become known as "the Prince of Surgery."

*The heights by great men reached and kept
Were not attained by sudden flight,
But they, while their companions slept,
Were toiling upward in the night.*

— H. W. Longfellow,
"The Ladder of St. Augustine"

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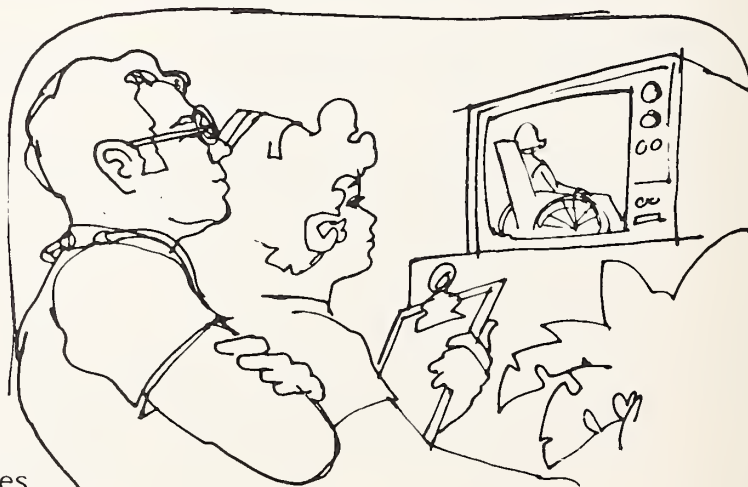
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Women in Medicine: A Survey of Professional Activities, Career Interruptions, and Conflict Resolutions

Trends in Career Patterns

(Second of Two Parts)

Eva D. Cohen, M.P.H. and Samuel P. Korper, M.P.H., M.Phil.

Abstract—A survey of the career patterns of women physicians ever licensed to practice medicine in Connecticut was undertaken in 1973 by the Office of Regional Activities and Continuing Education of Yale School of Medicine. Part I of this paper concluded that few changes have occurred over time with respect to the tendency of women physicians to cluster in certain specialties. The findings presented in Part II of this paper further support those of nationwide studies with respect to the tendency of women physicians to be salaried rather than self-employed.

The results also indicate that the lower amount of time devoted to medicine by women physicians primarily relates to the dual responsibilities placed on working mothers. The major reasons for interruptions among the women surveyed relate to societal expectations of the role of women as wives and mothers, whose own careers often had to be compromised in order to fulfill women's traditional family obligations.

Introduction

This communication represents Part II of a report on a survey of the patterns of professional activities of women physicians ever licensed to practice medicine in Connecticut. The purpose of the survey was to examine the contribution to medicine of these women physicians and to identify trends in their professional activities and careers. The survey, which was comprised of an original sample of 687 women doctors, resulted in a return of 373 completed questionnaires for a response rate of 55 percent. Slightly more than half of the respondents were residents of Connecticut at the time of the survey. The sample was divided into three groups: respondents who had graduated from medical school before 1945, between 1945 and 1959, and after 1959.

Part I described the methodology of the study and reported the findings on the characteristics of the respondents, the location of their medical school and

subsequent training, and their choice of specialization.¹ This paper documents their employment history, including their professional activities and patterns of practice, their productivity, earnings, interruptions in their careers, and their resolution of conflict between career and family responsibilities. In addition, some of the comments furnished by the respondents are presented to give the reader a flavor of the variety of opinions held by the respondents vis-a-vis their dual responsibilities.

Major conclusions presented in Part I were that there were few changes with respect to women physicians' choice of specialty over time, while trends were apparent with respect to the age at which the respondents had married and started their families. As marital status and the presence of children are strong determinants of women's participation in the labor force, the trends toward earlier childbearing has implications for the patterns of interruptions in women's professional lives. This paper, therefore, examines changes in the employment history of these women doctors, including their professional activities and patterns of practice, their productivity, earnings, interruptions in their careers, and their conflict resolutions in relation to the factors likely to influence these patterns.

Findings

Professional Activities

Information was requested from the respondents on their professional activities and the amount of time spent in patient care, research, teaching, and/or administration. Not surprisingly, almost three quarters of the respondents reported patient care as their major activity, defined as constituting at least one-third of their time, followed by teaching, research, and administration, in that order. In the present survey, 11 percent of the women reported teaching as their major activity. As the majority of the respondents in the present survey resided in Connecticut, which has two medical schools, the observed higher proportion of women in teaching may be due to the availability of teaching opportunities at these two institutions.

Type of Practice or Institution

Women physicians tend to practice in salaried positions to a greater extent than do male physicians. Phelps has referred to the tendency of women physicians to be salaried rather than self-employed and in

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positions which have “fixed” hours.² The present survey supports these findings as less than 30 percent of all the positions held were found to have been in private practice throughout the respondents’ job history. Twenty-one percent of the positions were hospital-based, 26 percent were in university and medical school settings, and 27 percent were in private practice.

Table 1 contains a distribution of the practice or institutional setting of the respondents in their most recent job, by year of graduation; the final column gives a ranking of these settings. A comparison with findings in previous studies indicates that the present survey included a higher percentage of women employed in a university or medical center. Dykman and Stalnaker, for example, reported that three percent of the women respondents in their sample were employed in such settings.³ Approximately 57 percent of the respondents reported being in private practice in the Dykman and Stalnaker survey compared with 35 percent in the present study. The differences between these findings may certainly be attributable to differences in sample selection and size between the two surveys. However, time may also account for part of the change. The former study was conducted in 1953, 20 years prior to the present survey, and their sample

consisted of physicians graduating from medical school between 1925 and 1940. Yet, if the comparison is made only for pre-1945 graduate in the present survey, of whom 21 percent reported being employed in universities and medical schools, the proportion is still higher than that in the Dykman-Stalnaker study. As the follow-up of the non-respondents indicated that a lower percentage of those who did not return the questionnaire were employed in university medical centers, it is likely that the respondents in the present survey overrepresent the number of women employed by such institutions.

Activity Status

Previous studies have measured physician productivity by several means: by examining active versus inactive professional status, number of hours of work per week, or number of years in practice following training. Phelps suggested that the entire practicing life of a physician should be examined to determine differences in the number of years in practice between men and women doctors.⁴ Because of women’s longer life expectancy, he hypothesized that they “return” an amount of time equivalent to that taken out to raise families, at the end of their careers. While this has not as yet been studied, it may turn out not to be the case, as a high percentage of women are employed in institutions with a mandatory retirement age, rather than self-employed. In addition, if women increasingly become subjected to strains of professional life, life expectancy for women with dual, and often stressful, family and career responsibilities, may approximate that of males. However, information on the oldest graduates in this survey indicates that many are practicing well into their 60s and 70s; one respondent reported beginning her ninth job at the age of 74.

At the time of the present survey, 87 percent of the respondents reported being active; the highest rate of activity, 95 percent, was reported by the middle group of graduates, the youngest graduates reported 92 percent, and the lowest rate of current activity was found among the oldest graduates, who also accounted for all but one of the retired respondents. Interestingly, no significant differences were observed among the three groups with respect to active versus inactive status.

As the range of hours of work per week differed among the women, several analyses were undertaken concerning the impact of marriage and children on full-time versus part-time practice. “Full-time” was defined as 35 or more hours per week. One hypothesis tested in the present survey was that the older women who might have less extensive or no family responsibilities at the time of the survey compared with the youngest respondents, would report a higher number

Table 1
SETTING IN MOST RECENT JOB,
BY YEAR OF GRADUATION

Setting	Year of Graduation			Total	Ranking
	1915-44	1945-59	1960-71		
Solo Practice	32 (31.1)	26 (17.4)	15 (16.1)	73 (21.2)	2
Partner Group Practice	6 (5.8)	17 (11.4)	12 (12.9)	35 (10.1)	5
Pre-paid Group Practice	1 (1.0)	5 (3.4)	2 (2.2)	8 (2.3)	8
Salaried Hospital Staff	18 (17.5)	27 (18.1)	20 (21.5)	65 (18.8)	3
University/Medical School	22 (21.4)	39 (26.2)	23 (24.7)	84 (24.4)	1
Industry	5 (4.8)	5 (3.4)	1 (1.1)	11 (3.2)	7
State/Local Government	14 (13.6)	26 (17.4)	16 (17.2)	56 (16.2)	4
Federal/Military	5 (4.8)	4 (2.7)	4 (4.3)	13 (3.8)	6
Total	103 (100.0)	149 (100.0)	93 (100.0)	345* (100.0)	

*Excluding 22 interns and missing information for 6 respondents.

of hours. While some differences were noted among the three groups, these differences were not statistically significant. However, a higher proportion of single women physicians were found to work full-time at the time of the survey than were the married or formerly married physicians ($X^2 = 14.712$, $p = < .001$, 2 df). Further, the presence of children was found to have a significant impact on the number of hours per week; a higher proportion of women without children reported working more than 35 hours per week at the time of the survey ($X^2 = 26.61$, $p = < .001$, 4 df). Finally, the number of children was inversely related to the number of hours per week. Women with more than two children had a higher rate of part-time employment ($X^2 = 14.869$, $p = < .001$, 2 df).

Earnings

The questionnaire included requests for information on earnings. As might be expected, this information was less completely reported than other parts of the questionnaire; only 287 respondents, 77 percent, answered questions concerning salary. The information presented in Table 2 represents salary or income at the time of the survey. As the data include women working differing hours per week, the information represents the actual earnings of 77 percent of the respondents at the time of the survey (1973). Four percent, or 13 respondents, reported being volunteers. At the other end of the scale, the highest incomes were reported among the radiologists, anesthesiologists, and pathologists, in that order; no volunteers were represented among these three categories.

Interruptions

In the context of productivity, the number and length of interruptions in the professional lives of the respondents are of interest. Do all women physicians

experience interruptions in their careers? How long are the absences? What is the relationship between years in practice and number of interruptions?

Information on the extent of interruptions, defined as an absence of one month or more, was requested in the survey. As shown in Table 3, nearly 40 percent of the women in the present survey reported no such interruptions in their careers, during training or subsequent employment, since graduation from medical

Table 3
NUMBER OF INTERRUPTIONS, BY YEAR OF GRADUATION

Number of Interruptions	Year of Graduation			Total
	1915-44	1945-59	1960-71	
None	46 (43.0)	50 (33.1)	50 (43.5)	146 (39.1)
One	29 (27.1)	41 (27.2)	33 (28.7)	103 (27.6)
Two	8 (7.5)	33 (21.8)	17 (14.8)	58 (15.6)
Three or more	23 (22.4)	27 (17.9)	15 (13.0)	66 (17.7)
Total	107 (100.0)	151 (100.0)	115 (100.0)	373 (100.0)

school. As there are relatively few studies which have examined the duration of women physicians' absences, comparisons are only approximate. Shapiro et al. found that 20 percent of the women in their survey reported having no interruptions (using the definition employed in the present survey).⁵ It should be pointed out, however, that the women in the present survey include more recent graduates than those in the Shapiro study. Of interest also is that there were no statistically significant differences among the three groups

Table 2
SALARY OR INCOME AT THE TIME OF SURVEY, BY SPECIALTY

Salary or Income	Anesthesiology	General Practice	Internal Medicine	Obstetrics/Gynecology	Pathology	Pediatrics	Psychiatry	Radiology	Other	Total
Volunteer	— (—)	1 (6.7)	3 (10.0)	2 (14.3)	— (—)	4 (5.5)	1 (2.3)	— (—)	2 (2.9)	13 (4.5)
Under \$10,000	1 (5.9)	5 (33.3)	4 (13.3)	3 (21.4)	1 (7.7)	19 (26.0)	9 (20.9)	1 (8.3)	9 (12.9)	52 (18.1)
\$10 - 19,999	2 (11.8)	1 (6.7)	7 (23.3)	2 (14.3)	1 (7.7)	15 (20.5)	9 (20.9)	1 (8.3)	15 (21.4)	53 (18.5)
\$20 - 29,999	6 (35.3)	7 (46.7)	10 (33.3)	2 (14.3)	5 (38.5)	24 (32.9)	9 (20.9)	3 (25.0)	20 (28.6)	86 (30.0)
\$30,000 and over	8 (47.1)	1 (6.7)	6 (20.0)	5 (35.7)	6 (46.2)	11 (15.1)	15 (34.9)	7 (58.3)	24 (34.3)	83 (28.9)
Total	17 (100.0)	15 (100.0)	30 (100.0)	14 (100.0)	13 (100.0)	73 (100.0)	43 (100.0)	12 (100.0)	70 (100.0)	287 (100.0)

with respect to the mean number of interruptions, despite the differences in years of practice.

The mean length of the interruptions for all respondents was 24 months; the oldest group reported a mean of 29 months, the middle group reported an average interruption of 30 months and the youngest group had a mean interruption of 10 months. As the median length of interruption was remarkably low for all three groups, it is evident that a relatively small number of women accounted for long absences; 13 percent of all respondents reported interruptions of 5 years or more. An analysis of the number of interruptions in relation to marital status revealed that single women physicians, not unexpectedly, had fewer interruptions.

The age at which women first interrupted their careers changed over the decades. Among the pre-1945 graduates, only 32 had a first interruption before age 30, while this percentage increased to 40 percent in the middle group, and 50 percent in the youngest group. A significantly higher percentage of the younger women reported interruptions before they had held a first job ($X^2 = 11.748, p = .003, 2 \text{ df}$). This shift undoubtedly is a concomitant of the age at which the respondent's first child was born or adopted, as the youngest group of women tended to start their families at a younger age, and the presence of children was found to be associated with a higher number of interruptions.

Reasons for Interruptions

The most frequently stated reasons for career interruptions in the present survey were pregnancy and childbearing, followed by illness, and "husband's career." The first column in Table 4 provides a distribution of the number of respondents reporting a given reason for interruptions attributed to the various categories. Illness was virtually the only category reported by single respondents to have caused them to

interrupt their careers. The reasons given by all respondents in the present survey differ little from what has been reported in previous surveys, which have investigated such questions.

Conflict Resolutions

Previous surveys have examined the alternative solutions to conflicts arising from the dual responsibilities of career and family demands. Bodel and Short,⁶ as well as Williams,⁷ concluded that the women doctors in their surveys had chosen compromises of temporarily withdrawing from medicine or working fewer hours, solutions which allowed them to carry both family and career responsibilities. The women in the present survey clearly had dealt with their dual-role conflicts in similar ways, as Table 5 shows. The most frequent method was to arrange for someone to care for their children, followed by working fewer hours, or a temporary withdrawal from professional activities. Thus, the responses indicated that many of the respondents had chosen solutions involving both relinquishing part of their family responsibilities and reducing their workload.

As the type of resolution may have changed over time with respect to one "favoring" career over family, analyses were undertaken of the conflict resolution by year of graduation. With the exception of the first category listed in the table, "fewer hours," no significant differences were observed.

A division of the conflict resolutions into categories favoring either career or family indicated that a slightly higher percentage of the reported solutions involved arrangements which allowed the respondent to reduce her home obligations and, thus, "favored" her career.

From the comments furnished in the questionnaires it is apparent that the unwillingness of many respondents to make a choice between family and career has resulted in role strains of varying degrees. This strain was reflected in the expressed need for supportive services; not unexpectedly, among the women with young children, child care arrangements were the major concern. The comment of one respondent expresses a viewpoint that was shared by many of the women surveyed: "My inactive years could have been cut drastically if child care, loans, and more flexible work schedules had been available 20 years ago." Refresher courses, flexible schedules and a job placement agency were additional services requested by some of the temporarily inactive women physicians to help them return to active status.

Discussion

One conclusion from the findings is that the women physicians surveyed in the study appear to differ little in their patterns of professional activities from women

Table 4
REASONS FOR INTERRUPTIONS

Reasons for Interruptions	No. of Respondents	No. of Interruptions
Illness	50	54
No Finance	6	12
Marriage	11	18
Pregnancy	79	85
Child-Rearing	79	102
Husband's Career	25	48
Marital Stress	2	10
Another Career	3	4
No Part-Time Work	4	14
No Accessible Program	7	17
Wanted Out	4	5
Other	23	29
Total	293	398

Table 5
TYPE OF CONFLICT RESOLUTION BY YEAR OF GRADUATION

<i>Conflict Resolution</i>	<i>Year of Graduation</i>			<i>Total*</i>	<i>Chi-square</i>
	<i>1915-44</i>	<i>1945-59</i>	<i>1960-71</i>		
Fewer Hours	30 (36.1)	72 (57.6)	53 (58.9)	155 (52.0)	X ² =11.641 p=.004, 2 df
Temporarily Stopped Working	27 (32.5)	41 (32.8)	23 (25.6)	91 (30.5)	N.S.
Changed Specialty	15 (18.1)	32 (25.6)	21 (23.3)	68 (22.8)	N.S.
Stopped Working	2 (2.4)	1 (0.8)	—	3 (1.0)	Not tested
Married Late	23 (27.7)	30 (24.0)	17 (18.9)	70 (23.5)	N.S.
Never Married	14 (58.3)	13 (52.0)	8 (32.0)	35 (47.3)	N.S.
Child Care	38 (69.1)	79 (76.0)	59 (86.8)	176 (77.5)	N.S.
Delayed Children	9 (16.4)	16 (15.4)	18 (26.5)	43 (18.9)	N.S.
No Children	5 (6.0)	4 (3.2)	5 (5.6)	14 (4.7)	Not tested
Divorced/Separated	4 (4.8)	9 (7.2)	4 (4.4)	17 (5.7)	Not tested
Other	6 (7.2)	4 (3.2)	4 (4.4)	14 (4.7)	Not tested

*Represents total number of women reporting a particular solution for each category given in the table.

doctors nationwide. Over the last decades they have increasingly and not unexpectedly chosen to work in settings and institutions which allow fixed hours and part-time practice.

In addition they often work in institutions and agencies which have not attracted male doctors. In the words of one respondent: "Medicine in the U.S. could not get along without the 'lady MDs'—I could not afford to do my low-paying but necessary job if I didn't have a husband supporting me."

The introductory quote in Part I of this paper alluded to the impression held by "educators and members of the profession" that women do not make use of their education. The purpose of this paper was to examine the career patterns of women physicians and, particularly, to look at the reasons for their observed lesser participation in the profession.

A summary of the findings with respect to interruptions should note that 40 percent of the respondents reported *no* interruptions since graduating from medical school. In addition, the relatively short absences suggest that the majority of the respondents had returned to active practice after their interruptions, albeit at reduced hours. It should be pointed out also, that limitations to women physicians' fuller use of their medical education only to a small extent is attributable to their biological role. This biological

role accounts for only a limited amount of interruptions in their careers.

A notion that differences between male and female physicians in the amount of time spent in medical practice are due to women's inability to endure the strains of medical practice—that women's innate characteristics are to blame for their lesser participation in medicine—does not take into account that these differences may largely be due to expectations fostered by society. Their absence from the labor force primarily is related to societal expectations of the role of women as caretakers of children or, in the absence of children in the home, as the individuals with principal responsibility for day-to-day household management.

While the women respondents, particularly those with children, clearly had differing views on the subject of making sacrifices in their own careers due to the demands made on them as wives and mothers, the following comment is an expression of a viewpoint shared by many of the respondents: "Marriage, pregnancy, childrearing, and husband's career have caused general difficulties and compromises in various ways, but I wouldn't want to do without any of them." However, some of the single respondents reported that they had remained single as a method of avoiding conflicts between career and family obligations.

As further evidenced in the following quote, all women are not willing to delegate aspects of their parental role: "I do not believe in replacing myself, a \$40-50,000 brain with a \$5-10,000 brain to look after my children; they deserve my own brain, effort, and attention." Many women want to continue to be the sole caretakers of their children. Others will undoubtedly choose to increase their professional activities with the help of social services and shared responsibilities within the family. In this context, the following quote by one participant in a conference on the fuller utilization of women physicians suggests that a reduction in the work load or a temporary withdrawal from medicine may have equal benefits to male and female physicians:

A few years at home are not wasted professionally; they bring rich rewards in understanding. It is only women who are given the opportunity for this kind of learning.⁸

To summarize, in examining the career patterns over time of the increasing number of women who have chosen medicine as a career, it is important that their contributions be analyzed in view of several factors. Primary among these factors are the obligations traditionally carried by women with respect to family responsibilities. This viewpoint was expressed in a recent study which contended that "the finding of some loss of investment (in educating women physicians) should not be used as an argument for discriminatory treatment of women seeking a medical education, as the right of women as individuals must be recognized."⁹

The findings in this survey provided clear evidence that the barriers which prevent many women physicians with children from participating more fully in their profession relate primarily to lack of child care. As most of the women had remained active, relatively few expressed a need for refresher courses. Thus, the establishment of a variety of child care arrangements, as well as part-time residencies and flexible schedules for both men and women with families constitute supportive services which might alleviate some of the dual responsibilities that traditionally have been shouldered by women.

In addition, the current deliberations of the National Labor Relations Board concerning the status of residency training will decide whether residents should be considered as "employees" as defined by recent amendments to the Taft Hartley Act, or "students" excluded from its jurisdiction.¹⁰ The outcome of these deliberations may thus affect some of the concerns raised in this study with respect to working conditions during residency training.

Acknowledgement

The authors wish to express their thanks to Mary E. Bayers, Chief, Licensure and Registration of the Connecticut State Department of Health, and to Miriam Abramovitz, M.S.W., and Katrina Clark, M.P.H. for their participation in the early stages of the study. This research was funded in part by RMPS DHEW Grant No. G03-RM-00008-05.

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Ethics of Clinical Research

Monroe E. Trout, M.D.

Ethics of clinical research vary from period of time to period of time. Just as our culture changes so does the ethics of our people. To understand the modern problem one has to look back into history. I will not make any judgment myself on these experiments, but let you decide for yourself whether they're ethical in today's climate. Most of them were considered to be ethical at the time they were performed.

In 1721 George I of England, at the behest of his daughter Caroline, saved the lives of six condemned criminals so they could receive smallpox vaccine prior to its administration to his grandchildren. In addition, he had seven children from an orphanage inoculated before his own grandchildren were inoculated for smallpox. All of you are aware of Louis Pasteur's work with the rabies vaccine. His first patient was Joseph Meister and it was highly successful. His second patient died. He was widely acclaimed after he inoculated Meister. He was roundly condemned after the second patient died.

In the early 1900's Dr. Richard Strong infected condemned criminals in the Philippines with the plague, two of whom died. Later he became Professor and Chairman of the Department of Tropical Medicine at Harvard University. In 1915 Goldberger produced pellagra in twelve white Mississippi convicts in an attempt to discover a cure. At the time very elaborate contracts were drawn up between the lawyers of the State, the doctor and the convicts and they were all paroled for their participation in this experiment.

In the 1940's 400 convicts were infected with malaria at Statesville Prison in Illinois. This occurred during World War II when quinine was unavailable because of the Japanese overrunning the Far East. They discovered a drug for malaria which saved the lives of many American soldiers in the South Pacific. However, an expert body known as the Green Commission was appointed to study the whole problem because the prisoners were promised parole as an inducement to participate. The Commission determined that there was nothing wrong with the program from an ethical or moral point of view except that in the future parole could not be offered as an inducement for volunteering. It is of interest that this highly successful and extremely safe program was discontinued.

In 1947 the Nuremberg trials of Karl Brandt and others took place. They, with total disregard for pain and suffering or death of political prisoners and prisoners of war, performed horrible experiments by freezing the prisoners, by making lampshades from their skin, by injecting overdoses of drugs and doing many other things which in no way resembled responsible clinical research. As a result of that we now have the Nuremberg Code.

In 1900 Walter Reed, in a very well designed and well executed study, determined the etiology of yellow fever. In doing so he asked for army volunteers, many of whom were from non-infected areas of the world. He injected them subcutaneously with the material or had them bitten by infected mosquitoes. All of these patients were true volunteers. All gave informed consent. All knew the risks. However, because the volunteers were from non-risk areas ethical questions were raised as to the propriety of that particular study.

All are aware of some of the modern experiments. In large part they were supported or performed by agencies of the United States Government. The Tuskegee experiment perhaps would have been a good experiment at the time if it had been aborted in two years when a possible cure for syphilis was discovered. It was permitted to go on for over thirty years and participants died from the disease when, in fact, not only two years after this study began, but then another ten years later an even more miraculous cure in the form of penicillin appeared on the scene.

Most are aware of the Willowbrook experiments in which hepatitis vaccine was given to mentally defective children. One fact which was largely ignored in regard to those experiments is that almost 100 percent of the children of that institution developed hepatitis upon admission to the institution. Many of them contracted their hepatitis along with other diseases such as shigellosis, pneumonia and other serious illnesses. It was an honest attempt to give them immunity with a measured amount of hepatitis vaccine prior to their exposure to all of the other diseases in the institution. These were the conditions under which the experiment was performed. Some of these facts get lost in the glare of publicity and one needs to know and look at all of the facts rather than just becoming engulfed in the emotionality of the issue.

Live cancer cells were injected into chronic debilitated individuals in the Jewish Chronic Disease Hospital in New York. The results of that experiment are well known but it is not widely known that prior to this experiment those same cells were injected into normal

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healthy convicts in the State of Ohio and they were rejected. Unfortunately, they were not rejected by the chronic debilitated old people in the Jewish Chronic Disease Hospital.

Dr. Joseph Goldzieher, at the time the first contraceptive pill was developed, studied it in a group of poorly educated Mexican-Americans, half of whom received a placebo. This study too has been questioned because eleven of those placebo patients became pregnant during the experiment.

What are some of the demands of modern medicine as far as the ethics of clinical research are concerned? First of all, it's the personal responsibility of the investigator to make a careful evaluation of the ethical acceptability of each study. Sir Derrick Dunlop, the famous British physician who headed the Committee on Safety of Medicines for many years, stated that if the study was ethical to begin with, then it is unethical to stop it in the middle of the experiment. So the real determination is in the beginning, not during the time of the investigation or afterwards. The establishment and maintenance of ethical practices remains with the investigators. They are responsible for their actions and anything which their assistants may also do. The investigator must inform the subject or the patient of all the features of research that might reasonably influence his willingness to participate. He should answer all of the subject's questions in an honest way. Openness and honesty should characterize the relationship during the entire time of the research. Deception should play no role in any clinical research. The patient or the normal subject should have the opportunity to refuse to participate or to drop out at any time. This is even more important where the investigator is in a position of "power." I'm referring to such groups as prisoners, students, children, mentally defectives, mentally ill, or even the very poor and the very ignorant.

There should be an agreement between the investigator and the subject in the beginning and both should abide by that agreement. The investigator should agree to protect the subject or the patient from any unnecessary physical discomfort, any harm, danger or mental distress. He should discuss the study with the patient after it is completed, especially if it was part of the patient's therapy. And last, but not least, the investigator should keep anything which he learns about that particular patient during the experiment in confidence.

A number of documents or codes should be read. The Nuremberg Code, the Declaration of Helsinki, the AMA Principles of Medical Ethics, the U.S. Public Health Service Guidelines, and the HEW Proposals for the Protection of Human Subjects. All of these codes generally contain provisions for (1) the experi-

ment to be carefully planned, (2) the experiment to be performed in animals first, (3) the experiment to be performed by qualified investigators, (4) the potential benefits to outweigh the potential risks, (5) informed voluntary consent, and (6) the right to withdraw from the experiment at any time.

Research on prisoners has received recent attention. At the present time research in prisoners has been abolished or severely curtailed in twenty-nine states. An act which is being considered now, HR-3603, will abolish research in all prisons in the United States which receive any kind of federal aid. That means just about every prison.

What are some of the issues? First of all, let us not confuse, and this unfortunately is what happens, research in prisons with other research projects which have nothing whatsoever to do with prisoners. The Tuskegee experiment was not with prisoners. The cancer cell experiment in New York was not with prisoners. Legitimate drug research in prisoners should not be confused with behavioral modification programs or with psychosurgery or with other methods used in prisons to change the thinking or the minds of prisoners. These are separate and distinct issues. One witness at the hearings on HR-3603 pointed out that the Congress had just passed a bill establishing a National Rape Center, and one of the mandates in the bill was for this Center to perform research in prisons on homosexual rape. The question was asked, "How can Congress mandate research in one Act and abolish it in another?" Congress passed the 1962 Food and Drug Amendments. Under those amendments the FDA requires Phase I studies for all drugs. The U.S. is the only country in the world that requires Phase I studies. Phase I studies are performed on normal volunteers to determine the dose and the pharmacology of the drug in man. Other countries of the world don't use prisoners for research, but at the same time they also use their new drugs for the first time in patients and not in normal individuals. It is well recognized by most U.S. scientists that a drug should be given first to normal individuals so that you can determine the dose, the metabolic fate, the pharmacological actions and, in fact, the side effects prior to giving it to a sick patient where the drugs effects may be clouded by the patient's illness or other drugs which he may be receiving. One exception to this would be a drug for cancer where you may have a real problem using such a drug in normal volunteers. It may be necessary ethically to use the drug for the first time in a cancer patient.

It is interesting that one of the main reasons why some people want to abolish research in prisons is because "there can be no voluntary informed consent given because of the inherent coercive nature of the

Testing in Humans: Who, Where & When.

the weight of ethical opinion:

Few would disagree that the effectiveness and safety of any therapeutic agent or device must be determined through clinical research.

But now the *practice* of clinical research is under appraisal by Congress, the press and the general public. Who shall administer it? On whom are the products to be tested? Under what circumstances? And how shall results be evaluated and utilized?

The Pharmaceutical Manufacturers Association represents firms that are significantly engaged in the discovery and development of new medicines, medical devices and diagnostic products. Clinical research is essential to their efforts. Consequently, PMA formulated positions which it submitted on July 11, 1975, to the Subcommittee on Health of the Senate Labor and Public Welfare Committee, as its official policy recommendations. Here are the essentials of PMA's current thinking in this vital area.

1. PMA supports the mandate and mission of the National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research and offers to establish a special committee composed of experts of appropriate disciplines familiar with the industry's research methodology to volunteer its service to the Commission.

2. PMA supports the formation of an independent, expert, broadly based and representative panel to assess the current state of drug innovation and the impact upon it of existing laws, regulations and procedures.

3. When FDA proposes regulations, it should prepare and publish in the *Federal Register* a detailed statement assessing the impact of those regulations on drug and device innovation.

4. PMA proposes that an appropriately qualified medical organization be encouraged to undertake a comprehensive study of the optimum roles and responsibilities of the sponsor and physician when company-sponsored clinical research is performed by independent clinical investigators.

5. PMA recognizes that the physician-investigator has, and should have, the ultimate responsibility for deciding the substance and form of the informed consent to be obtained. However, PMA recommends that the sponsor of the experiment aid the investigator in discharging this important responsibility by providing (1) a document detailing the investigator's responsibilities under FDA regulations with regard to patient consent, and (2) a written description of the relevant facts about the investigational item to be studied, in comprehensible lay language.

6. In the case of children, the sponsor must require that informed consent be obtained from a legally appropriate representative of the participant. Voluntary consent of an older child, who may be capable of understanding, in addition to that of a parent, guardian or other legally responsible person, is advisable. Safety of the drug or device shall have been assessed in adult populations prior to use in children.

7. PMA endorses the general principle that, in the case of the mentally infirm, consent should be sought from both an understanding subject and from a parent or guardian, or in their absence, another legally responsible person.

8. Pharmaceutical manufacturers sponsoring investigations in prisons must take all reasonable care to assure that the facilities and personnel used in the conduct of the investigations are suitable for the protection of participants, and for the avoidance of coercion, with a respect for basic humanitarian principles.

9. Sponsors intending to conduct non-therapeutic clinical trials through the participation of employee volunteers should expand the membership and scope of its existing Medical Research Committee, or establish such an internal Medical Research Committee, with responsibility to approve the consent forms of all volunteers, designs, protocols and the scope of the trial. The Committee should also bear responsibility to ensure full compliance with all procedures intended to protect employee volunteers' rights.

10. Where the sponsor obtains medical information or data on individuals, it shall be accorded the same confidential

status as provided in codes of ethics governing health care professionals.

11. PMA and its member firms accept responsibility to aid and encourage appropriate follow-up of human subjects who have received investigational products that cause latent toxicity in animals or, during their use in clinical investigation, are found to cause unexpected and serious adverse effects.

12. PMA supports the exploration and development by its member companies of more systematic surveillance procedures for newly marketed products.

13. When a pharmaceutical manufacturer concludes, on the basis of early clinical trials of a basic new agent, that a new drug application is likely to be submitted, a proposed development plan accompanied by a summary of existing data, would be submitted to the FDA. Following a review of this submission, the FDA, and its Advisory Committee where appropriate, would meet with the sponsor to discuss the development plan. No *formal* FDA approval should be required at this stage. Rather, the emphasis should be on identification of potential problems and questions for the sponsor's further study and resolution as the program develops.

The PMA believes that health professionals as well as the public at large should be made aware of these 13 points in its Policy on Clinical Research. For these recommendations envisage constructive, cooperative action by industry, research institutions, the health professions and government to encourage creative and workable responses to issues involved in the clinical investigation of new products.



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prison." Are they any more coerced than the student whose professor asks him to participate in an experiment in a university? Are they any more coerced than the poor individual without a job on the outside? Isn't economic coercion or lack of education just as important in a volunteer setting? Is the prisoner any more coerced than the cancer patient who really wants to cling to life and will try anything, even an experimental drug, to survive? If, in fact, the critics are correct that there is an inherent coercive nature to getting informed consent and getting true volunteers in prisons, I think that the answer is really in the prisons themselves where only 20 percent of the prisoners volunteer for such experiments. If the financial reward, if the amenities of better health care and all the other conditions of research were so good that they coerced prisoners, why don't 100 percent of them volunteer? Also, isn't it a deprivation of the prisoner's civil and constitutional rights to deny him permission to make this decision? Isn't it another way to punish him and make him less of a man by denying him the right to make another decision? Also, isn't it just as immoral to have someone else make that decision for him? Most prisoners, where a vote has been taken, overwhelmingly support such research. The American people in a nationwide vote in 1974 after the *Advocates* program on the subject on public service television voted 68% in favor of such research.

Another issue is the promise of parole. I believe the only place where you get "good time" any more for participating in a medical experiment is in the federal prison in Lexington, Kentucky. Lexington is where they're trying to find cures for drug abuse and all of the patients who are admitted there are drug addicts.

Clinical research in prisons should not be the hostage for those who demand better overall living conditions or more freedom for prisoners. If the federal government mandates that Phase I studies be performed (and I agree with that mandate), then the critics of drug research in prisoners should come forth with alternatives. The alternative is not a national moratorium on prisoner research, because there is no national moratorium on death or pain and suffering from cancer, heart disease, rheumatoid arthritis, malaria, schistosomiasis or any of the other great scourges that are still plaguing the earth. A study performed by a famed economist indicated that a one year delay in the introduction of one anti-tuberculosis drug in the United States resulted in 5,000 deaths and 43,000 more tuberculosis patients. There is no moratorium on death or pain and suffering. Until the critics offer a viable alternative, prisoner research with well developed safeguards is a necessity. Perhaps one alternative would be a national draft for medical research but wouldn't the critics have a field day with the coercive nature of such a program. Perhaps not.

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Personal Financial Management for the Self-employed Professional: How Much Life Insurance?

Harold A. Wolf, Ph.D.

The financial management problems of the self-employed professional man or woman differ from those of the average citizen. The person who works for an employer has a salary, and whether it be high or low much of his financial planning is done for him. He has a package of life insurance, social security, health insurance, a private pension plan, and tax payments all deducted from his salary. Even his monthly mortgage or rent payment and his desired savings can be deducted from his checking account and made by a computer. He ends up with a net amount, and all he must do is learn to spend his dollars wisely. His financial planning has been institutionalized.

The self-employed person must learn to do all these things for himself. A physician faces an even more difficult situation than many other self-employed professionals such as accountants, lawyers, or small businessmen. These latter groups' stock and trade is largely finance. They have some degree of training and experience in the field, and they make financial decisions every day. For them, handling personal financial affairs is not an extra job; it is part of their regular occupation. For a physician it is an extra task that could become a full-time job. Therein lies the second disadvantage faced by a doctor: he doesn't have the time. Precepts of accounting and law change slowly, and once an accountant or a lawyer has mastered his area of expertise, he needs to spend only a fair amount of energy to keep pace with his field. But medicine changes rapidly and demands constant review and consultation for the practitioner to maintain his expertise—a process which consumes much of his leisure time.

In summary then, a doctor has two disadvantages; first, he has to be an expert in the fields of medicine and finance; and second, medicine takes all or most of his time. He is so busy he has difficulty taking care of what he has earned. It is as if the accountant were required to do his financial planning in a foreign language which he has never studied and lacks the time to study. Yet there is no alternative; the physician must become at least a well-informed layman in finance.

How Much Life Insurance?

There are two main reasons for buying life insurance, for protection and for savings. Let us examine each in turn.

Life insurance protects the individual's future income stream. More precisely it protects dependents from financial hardship should the income stream be cut off due to the premature death of the insured. Therefore the bulk of this insurance should be on the main breadwinner. To be sure, if the spouse who has no money income dies, there may be additional costs for babysitters, maids, and the like. Consequently, the spouse should be looked upon as generating an income stream in kind which should also be protected with some life insurance.

The Future Income Stream

The future income stream can be predicted with reasonable accuracy. A few assumptions are necessary. For example, a 40-year-old physician making \$50,000 per year will earn \$1,250,000 if he continues at this level and retires at age 65.

However, his income will almost certainly rise above \$50,000 per year for several reasons. First, he may not yet have reached his peak personal productivity. Due to a growing demand for his services, he may decide to work harder and serve more patients, or his skills may improve. Either of these two factors will increase his income. Even if he has reached his peak personal productivity, his income will rise for two additional reasons. His productivity and hence his income will rise because of the better medical care he is able to provide as the years pass and medical knowledge grows. Finally, his income will rise dollar-wise to offset (more or less roughly) inflation. If medical productivity, due to advancing medical knowledge, is in line with national productivity increases in other fields, this will generate about a 2.5 to 3% annual growth in medical income. If we assume the rate of inflation declines soon to its historical level, we obtain another 3 to 4% annual growth in the \$50,000 per year income of our hypothetical 40-year-old doctor, even if he has reached his peak personal productivity. Compounding this figure over 25 years gives us a lifetime income stream of \$3,271,900. However, future dollars are worth less than current dollars. Hence the preceding figure must

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be discounted to obtain a figure which if invested now would grow to \$3,271,900 in 25 years. This involves an assumption regarding the interest rate at which present dollars would grow. A figure of 7% would not be out of line today. Therefore, we are discounting future dollars at about the same rate as income is growing and hence they offset. The \$3,271,900 future lifetime income is currently worth \$1,250,000 and that theoretically is the upper limit on the amount of life insurance our hypothetical doctor should have in order to fully protect his income stream. It should be noted that with every passing year the amount of insurance needed would decline as the insured grows older until, when he is 64, the figure is the same as his final year's income.

If our self-employed physician purchased all of this insurance at age 40, the annual premiums would be about \$14,000 if it were 20-year term insurance, and about \$30,000 if it were the cheapest form of permanent insurance. The conclusion is that almost no one can afford all of the insurance he needs as determined by the income principle. But, this is an important beginning point and it can be modified in accordance with the "family need" principle.

Family Need

The family need principle suggests that enough insurance should be purchased so that the family could live at some reasonable level in the event of the breadwinner's death. The amount would vary with the size of the family, age of the spouse and children, and the level that is considered reasonable. The insurance required based upon the need principle would be less than that required based upon the income principle in virtually all cases. But both income and need should be considered in reaching decisions regarding life insurance. Obviously different individuals would give various weight to the above factors. Personal value judgments are involved.

It should be noted, moreover, that family needs decline somewhat upon the death of the breadwinner and for that and other reasons the insurance required under the family need principle is less than that required under the income principle. The breadwinner is not only an income earner, but an income spender. In addition, the family will in all likelihood receive income from other sources such as social security. Finally, family needs tend to decline with time. As children grow older they become self-supporting, and the widow may supplement her income with part-time or full-time employment.

The following guide can be used to provide a rough estimate of how much insurance is needed:

Present monthly budget	\$ -----
Less reduction in budget after death	\$ -----

Less monthly income from social security and other sources	\$ -----
Equals monthly insurance income needed	\$ -----

Saving Through Life Insurance

Some life insurance policies have a savings feature built into them which provides for living benefits in the future. These are the permanent policies as opposed to the cheaper term policies which have no savings feature built into them. This then, is a second reason for buying life insurance.

The individual must again begin by making two decisions: how much to save in total and what proportion of that sum to save via life insurance. Total savings must properly be determined by income, size and age of family, personal priorities and value judgments. The savings that are generated through life insurance are referred to as the policy's cash surrender value. They accumulate on some policies for three reasons: (1) premiums are in excess of the sums necessary to meet death claims; (2) premiums are paid in advance of when they are needed to meet death claims; and (3) these surplus funds are invested by the company on behalf of the policyholder and earn interest. The third factor is the yield on a policy, and it should be compared to alternative investments and then given substantial weight in deciding how much life insurance should be purchased for savings purposes.

It is virtually impossible to generalize regarding yield on a life insurance policy, but a person can make a comparison between his individual policy and alternative investments. First, the insured would have to take the difference in premiums between his permanent policy and the premiums on a like amount of term insurance. That difference is what generates savings and it represents the sum that could be put into an alternative investment, if the person chose not to save through life insurance. If that difference were put into a bank or a savings and loan association, yielding say 5%, it would grow in a predictable manner. Let us assume this differential sum is \$500 per year. Depositing \$500 per year into a bank at 5% would grow to \$2,762.80 at the end of 5 years, \$6,288.95 at the end of 10 years, and \$16,533.00 at the end of 20 years. These amounts may now be compared to the cash surrender value of the permanent life insurance policy at the end of the same 5, 10, and 20 year intervals. The life insurance policy's cash surrender value is guaranteed and predictable.

An allowance must now, however, be made for taxes to find the after tax yield on the savings deposited in a bank because the interest accruing on bank deposits is taxable, whereas the interest portion of the cash

surrender value of a life insurance policy is generally not taxable.

Expected future inflation also should be given some weight in making decisions on saving through life insurance. Since life insurance companies invest primarily in fixed obligations and earn a fixed return, inflation erodes the cash surrender value of life insurance policies. This is also true of many other investment alternatives.

Whether or not an individual has the discipline to save without life insurance is another factor to consider. People who lack the discipline to save on their own might enter into an agreement with a life insurance company and save contractually via a life insurance policy.

Finally, most of us would want to diversify our investments and buy some life insurance for savings purposes because we never know what the yield on all of our alternative investments will be.

What Kind of Life Insurance

When the prospective policyholder has decided how much life insurance to buy after considering both the income protection and family need principle, and having given some weight to savings, it is then necessary to select the proper insurance package, which differs for nearly every individual. The physician may not be able to afford all the insurance he would like to have at the beginning of his career, and hence, he would have to buy it in several packages. In such a case he should start out with mostly term insurance which has no savings feature whatsoever built into it but which provides the largest face value of protection for a given premium. This would appeal to the younger professional person. There are also modified plans that appeal to people just beginning their professional careers; they have lower premiums than regular policies for the first three or five years, after which time they are slightly higher.

The four basic kinds of life insurance to choose from are (1) term, (2) whole life (sometimes called straight life), (3) limited pay life, and (4) endowment policies. There is no savings feature in a term policy; the others

all generate savings and these savings become progressively larger as one moves from whole life to limited pay to an endowment policy. Premiums also rise as one moves in this direction for a given face value of life insurance.

How much life insurance then should our 40-year-old physician earning \$50,000 per year have? Of course, by age 40 he should have acquired much of his life insurance package. Starting his professional career at about 30 he should immediately have purchased some term insurance and as soon as possible afterwards, some permanent insurance. Then he should acquire more as he can afford to do so and build his insurance portfolio over a few years. He should determine his insurance needs early in his career, and then acquire that amount before he makes many other significant investments.

How much he should have at age 40 is, of course, a personal choice. No one can make that decision for him, but in spite of this there are some rules of thumb. One such rule holds that a person should have insurance equal to four or five times his annual income. Some insurance companies will obtain a client's age, income, number of dependents, total assets and liabilities, income from property, and income from wages and salaries, run all this information through a computer and come up with a recommended amount of insurance. In the final analysis however, there is no substitute for the individual making a decision based upon his income stream, family need, and the other factors, together with his own value judgments. In general, a large part of his insurance portfolio should be term insurance designed to expire at about the time when his children become self-supporting. Some should be permanent insurance, probably whole life. Whole life has some savings built into it, but not as much as a limited pay or an endowment policy. Later, when the retirement years approach, this same whole life policy can be converted into an annuity.

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Statement on Patient Education

The American Medical Association's Department of Health Education and Division of Medical Practice have been exploring the overall subject of planned patient education programs and have arrived at the following general findings and recommendations.

Definition and Role of Planned Patient Education Programs

It is recognized that increasingly complex patterns of health care, along with the patient's environment, attitude, lifestyle and cooperation, all play an important part in effective treatment. Informed, motivated and supportive participation in treatment by patients and their families can aid the recovery of the patient and enhance the quality of his health. Patient education, as an integral part of high quality health care, provides an avenue to such improved participation.

Education of the patient has always been part of the ongoing professional responsibility of physicians, nurses, dietitians, therapists and all other members of the health team. Health professionals have traditionally provided patients with some information about their illness and the prescribed course of treatment. Some health instruction has also been provided. In some situations, there is a need indicated for a structured educational effort beyond that which individual members of the team can provide. It is in these situations that planned patient education programs may be expected to serve.

The provision of patient education services, designed to assist the patient and his family in the effective management of individual health, is a shared and continuous responsibility of both the physician and the patient. Patient education directed toward the effective management of individual illness and maintenance of health commences with the patient's entry into the health services. A positive personal experience between the physician and the patient at first contact will greatly contribute to the success of an effective patient education program.

The following factors define planned patient education:

- (1) Programs are distinguished from general health education of the public in that they focus on individuals who present themselves for medical services in institutions and in physicians' offices.
- (2) Programs are directed at the patient's understanding of his specific disease entity or physical or mental disability.

- (3) Programs assist the patient (and/or sometimes family members) to cooperate in the treatment of the disease or disability.
- (4) Programs involve patients with diseases or disabilities in which there are substantial grounds for belief that the patient will be better able to participate in treatment and that the treatment will be more effective with such a planned program than without it.

It should be clear from these four factors that planned patient education programs are distinct from general health education programs for the public and from programs intended as education for prevention of disease or for health maintenance. The planned program is for patients under treatment.

As the relationship between the physician and the patient is established, the physician determines the patient's level of knowledge concerning his illness or health, and the patient's educational needs. In this relationship, it is incumbent upon the patient to provide the necessary health history and medical information, and to comply with the prescribed medical regimen. Adherence to a prescribed treatment program is dependent upon the patient's understanding and acceptance of his condition, recognition of the importance of his role in the daily management of his prescribed treatment and satisfaction with health services provided. It is in these areas that a planned patient education program can enhance quality care.

Reimbursement

Planned patient education is a legitimate reimbursable item of patient care, when prescribed by a physician, appropriate to the patient's condition and substantiated by entries on the patient record. Planned patient education should be eligible for reimbursement under the various health insurance and other third-party payment programs.

Benefits

Properly planned programs of this type will improve care and can reduce the overall cost of treatment. Enabling patients to play a greater part in their own treatment can reduce unnecessary utilization of trained health professionals and of health care facilities. However, potential benefits such as cost containment, shortened recovery time and improved patient morale may not be immediately achievable. Any new interdisciplinary program takes time to develop and to become effective.

Content and Organization

Planned patient education programs should be

Report of the Board of Trustees of the AMA to the House of Delegates, Annual Meeting, June, 1975.

based on identified objectives; should make use of sound educational methods; should have approved content that is scientifically accurate; and should be adaptable to the individual needs of patients.

Objectives need to be clarified at the outset along with specific criteria for measuring their achievement. The success or failure of the program should be determined by how well the objectives are realized.

Recommendations

The Board of Trustees believes the general findings and recommendations contained in this report respond to Resolutions 37 and 41, and recommends that the report be adopted and Association activities to improve effective patient education be continued.

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BOOK REVIEWS

Ethics of Health Care. Edited by Laurence R. Tancredi. 313 pp. Washington, D.C., National Academy of Sciences, Institute of Medicine, 1974. Paper \$6.00.

This volume contains papers of the "Conference on Health Care and Changing Values" held in November 1973 by the Institute of Medicine of the National Academy of Sciences. Its contents include broad headings of the evergrowing literature of medical ethics. The titles of the headings give an idea of the conference: (1) Conceptual Foundations for an Ethics of Medical Care (2) Government Decision-Making and the Preciousness of Life (3) Consumer Evaluation of Health Care (4) Professional Values (5) Care Settings and Value (6) Ethical Problems in the Treatment of the Chronically Ill and the Aged.

As the editor points out, the subjects and categories discussed go way beyond the interest in informed consent and human experimentation stimulated by the Nazi atrocities. The conference reflects contemporaneous idea that medical ethics now is not the exclusive domain of the medical profession, but involves society.

This very conference reflects the shift in responsibility for health decisions and its attendant emerging ethical problems to a body that represents society, and government. A committee, chaired by F. C. Redlich, M.D., Professor of Psychiatry, Yale School of Medicine, was established by the Institute of Medicine, with support from the Department of Health, Education, and Welfare, to examine the broader social-ethical issues of health care. The committee concluded that these issues involving medical ethics in society fall within the six general categories which provided the specific topics for this conference.

The reviewer would like to be able to discuss each of these categories, but space does not permit it. The volume contains ten major papers, with at least one commentary on each. With ten different papers on different subjects one cannot expect that depth which one might desire, but this is the aim of the conference—to present these six broad categories to set up a theoretical framework for specific ethical issues now arising in medical care. The participants include the leaders in these fields. The committee and they accomplish their aim to highlight the conflicts that exist among the various values, and lay the groundwork for future discussions, evaluations, and research on these issues.

The categories present in a generic sense the ethical problems now facing not only the profession, but consumers, society, and government—as it should. Gone are the days when medical ethics can be discussed and formulated without including the social context of the values that pervade it.

Because of its approach to present day ethical issues and problems in medicine, and because of the stature of the participants, this volume belongs in the library of anyone, certainly including physicians, interested in the basic medical ethical issues confronting our society at the present time.

Fred Fabro, M.D.

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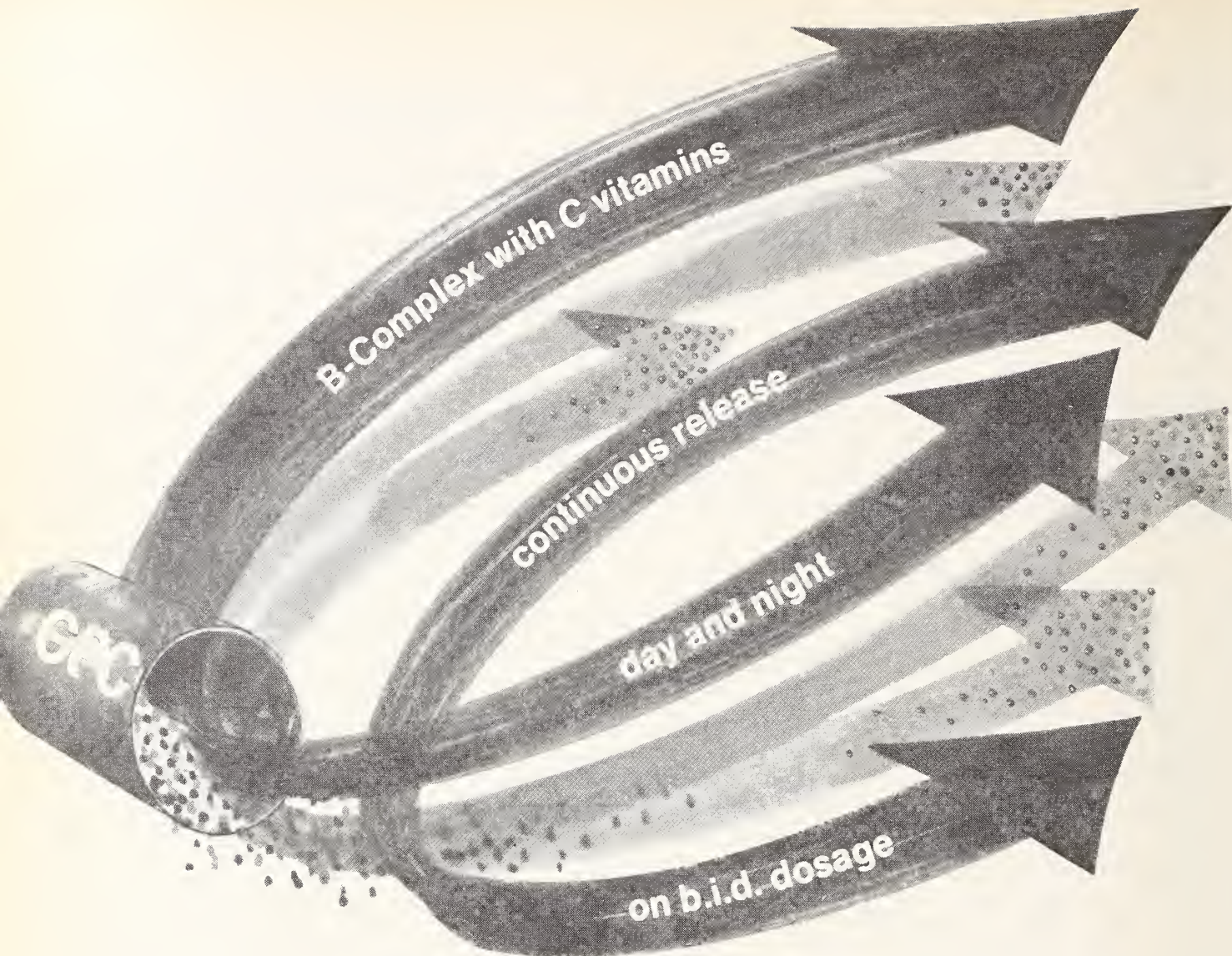
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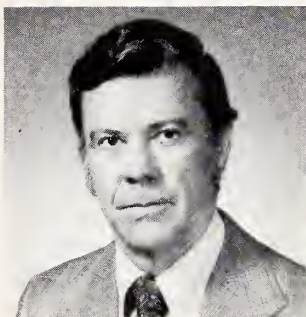
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The President's Page



The profession of medicine, having for its end the common good of mankind, knows nothing of national enmities, of political strife, of sectarian dissensions. Disease and pain the sole conditions of its ministry, it is disquieted by no misgivings concerning the justice and honesty of its client's cause; but dispenses its peculiar benefits, without stint or scruple, to men of every country and party, rank and religion, and to men of no religion at all.

—Sir Thomas Watson

This basic principle has long served the ethical and humanist physician. In the perspective of this bicentennial year, such a physician attempting to follow its directives is both embattled and embittered. Controls from all levels of government harass his practice. Strikes and slowdowns—breaches in the social contract Rousseau said are so essential to a viable society—have occurred in his own profession. Individuals and groups are increasingly unable to sublimate their own short term interests, wants and gratifications for the legitimate and demonstrable good of society. Finally, the Federal Trade Commission has instituted a suit alleging that his life work is a trade, his institutions profit-making, and his ethical code detrimental to the public interest.

Until the middle of this century “the family doctor” was an acclaimed national institution and medicine was largely free of the taint of commercialism. Although services were rendered, money exchanged, and occasionally individuals transgressed the ideals, the times and strong ethical pressure maintained an atmosphere suggesting more an avocation than a trade. The ordinary physician appeared more motivated by a sincere desire to help his charges and gain the respect of his peers than to accumulate wealth.

Beginning in the forties and accelerating in the fifties, the medical commons became the scene of intense competition between health care groups who had previously been allies. Individual physicians, closed panel groups, hospitals, third party payors, and even the government aggressively began to alter patterns of practice and referral. These groups competed not only by stressing quality, accessible and comprehensive care, but for the first time, cost. Lobbyists sought enabling legislation to favor one form of practice versus another. Hospitals and clinics sought laudatory recognition in the media under the guise that their activities were newsworthy or necessary to improve public relations. The age of the business ethic had arrived in medicine!

The fault lies not with medicine or with the profession but with the times. What is happening is that we are adapting to an industrial world dominated by “the bottom line.” The values which maintained the traditional ideal are slowly being eroded without fanfare or publicity. The old order, with its sense of individual and group social responsibility, is being replaced by a system of competitive enterprise with its inherent abuses. Like the economists, we will soon know the cost of everything and value of nothing.

It is a tribute to the profession that the old ideals have resisted change and persisted as long as they have in such an unfavorable climate. We should stop being surprised to find medicine continually under attack from all quarters. Many influential and otherwise rational people appear permanently humiliated by our rapport with our patients, our continuing medical progress, and our attempts to avoid the hucksterism of the market place.

It is not at all obvious that we have either the will, the institutions, or the wisdom to withstand the challenges to become a completely commercial venture. The Society can take one positive step forward by denying the jurisdiction and refuting the allegations of the Federal Trade Commission.

Madison Avenue has no place in medicine.

Guy W. Van Syckle, M.D.
President

Reflections from the Dean's Office

Robert U. Massey, M.D.

It is dangerous to begin planning for some virtuous use of power. Warnings are everywhere and the examples compelling. Lord Acton said that "power tends to corrupt and absolute power corrupts absolutely,"¹ not, thank heaven, that all power corrupts, as I have heard him quoted. C.P. Snow said that "no one is fit to be trusted with power. Any man who has lived at all knows the follies and wickedness he's capable of. If he does not know it, he is not fit to govern others. And if he does know it, he knows that neither he nor any man ought to be allowed to decide a single human fate."²

A third lord had something more temperate to say about power. Benjamin Disraeli wrote "I repeat . . . that all power is a trust, that we are accountable for its exercise; . . ."³

Around the country a thousand men and women now serving on 114 medical school admissions committees are exercising the power of selection over 45,000 other men and women seeking to be admitted to medical schools. There is nothing surprising about that. Education has always involved competition and selection.

What is surprising is that medical schools, holding such power, allow that power to work uncontrolled in liberal arts colleges inflating grades, intensifying unhealthy competition, and twisting four years of educational opportunity into a shambles of unrelated courses and unprofitable activities.

Faculties and their students know this has been going on for years and that it is not letting up. Liberal arts colleges are powerless to do much about it; students are compelled to play the game according to the apparent rules; and medical school faculties are uneasy, but offer few solutions. One suggestion has been to overhaul the MCAT so that it can measure empathy. That will not do, and misses the point.

In the past professional schools took whatever group of students the undergraduate schools produced. Educational requirements were pretty much determined by liberal arts faculties; the quality of instruction was not as uniform as that in the continental Gymnasium or lycee, but professional and graduate schools could select, and after all, their quality was not uniform either.

Four years of college work before medical school did not become the rule in this country until after 1925. Medical education reformers saw the value of

such work to lie partly in the premedical sciences of biology, chemistry, and physics, but equally in the liberal arts studies of mathematics, language, history, literature, and art. "The physician should first of all be an educated man," wrote Flexner; "that is required by his position in the community and his relations to the patient and the patient's family."⁴

Liberal arts education has become little more than a bookkeeping exercise in grade points and credit hours to provide the price for admission to graduate school or professional school. The educational purposes of these four years between high school and the specialized work of the graduate or professional school have been lost.

Forced to accept the product of the high schools (by all accounts not improving in academic quality) and to prepare students to qualify for admission to some advanced specialized program, the liberal arts faculties must feel that they have lost control over undergraduate education.

The medical schools could help to refurbish the objectives of a liberal education and to support these objectives by making them part of admission expectations and requirements. There will be objections that students ought to be free from course requirements, that they should be free to design their own education. They are, however, not free now; they are often forced into irrational choices in an experience that is anything but liberating.

Medical school admissions committees have unprecedented power over undergraduate education. This power could be used to help preserve the essential place of the liberal arts in our culture. To avoid misuse, graduate, professional, and undergraduate faculties should work together on the solution. New requirements should not be imposed by the medical schools without consultation with undergraduate faculties; the professions should not dictate the nature of a liberal education. Neither should the present opportunity for the application of rational power be missed. The liberal arts faculties are looking for allies.

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EDITORIALS

The Silent Influence

Sir William Osler would have had us believe that the great personalities of our medical past "remind us continually that in the records of no other profession is there to be found so large a number of men who have combined intellectual pre-eminence with nobility of character."¹ Never mind that Galen was contentious and obnoxiously proud, that Vesalius had virulent feuds with his own teachers and assistants, or that Freud broke in bitter enmity with his closest disciple. For the sake of Osler's kindly and charitable spirit we will ignore the evidence that his friend Halsted's greatest work was done after that surgical Olympian became hooked on cocaine and morphine. Forget also for a moment that the abusive Sauerbruch boasted in print of his own Casanova-like qualities; cast a blind eye on the messy details of the law suit involving Waksman's financial rewards for discovering streptomycin; turn a deaf ear to the acrimonious debate that still echoes down the corridors of a century over primacy in the origins of anesthesia.

For the present issue of *Connecticut Medicine* we declare a literary moratorium on thoughts of the obnoxious or embarrassing behavior of some of our professional forebears, and we view in the golden light of temporary forgiveness the shadier moments of our heritage. We agree to this armistice with the occasional plagues of our past for two reasons. The first is that with all of its warts, fevers and convulsive paroxysms the chronicle of medical history has been a glorious one. If our lineage has been peppered with some irascible personalities, it has also been salted and leavened with dedicated and inspired physicians, who have led lives that are exhilarating to study, both because of the quality of their contributions and the quality of the

men who made them. As in most other things, Sir William was in this instance much more right than he was wrong. It is for what he called "the silent influence of character on character" that men study history, as well as for the events themselves.

The second reason we have declared a bank holiday on the lapses of our ancestors-in-healing is that with the present issue, *Connecticut Medicine* institutes a Department devoted to the History of Medicine. The first paper is a biographical one, and deals with the life of an absolute Medical Mister Clean, Astley Paston Cooper. The only smudge on this Prince of Surgery's otherwise unsullied escutcheon is a mildly underhanded dealing or two with grave-robbers. Ergo, Cooper leads off.

Articles in the History of Medicine will appear bi-monthly, or more frequently if the number of high-quality contributions is numerous. Connecticut has been fortunate in a tradition of scholarship in the field of medical history. The journal invites authors of all levels of experience to use its pages as a forum for their work, and studies in any area of medicine will be welcomed. Contributors are assured that papers will be reviewed by our editors, with the help of appropriate consultants. *Connecticut Medicine* hopes that physicians and others interested in the study of the history of our art will come to view this journal as a dependable and scholarly source for their reading and outlet for their writing.

Sherwin B. Nuland, M.D.

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Thus it Was

I am being driven forward
Into an unknown land.
The pass grows steeper,
The air colder and sharper.
A wind from my unknown goal
Stirs the strings
Of expectation.
Still the question:
Shall I ever get there?
There where life resounds,
A clear pure note
In the silence.

This simple poem,* written by the late Dag Hammarskjöld in his book *Markings* might very well depict the way of a physician through his professional life in his search for medical knowledge. Such a journey inevitably takes him through little known areas concerning the nature of certain disease processes causing him to wonder, no doubt, if the unknown goal of the conquest of disease will ever be achieved. Fraught with false starts and endless turnings, the journey can be difficult and frustrating.

Just as coastal mariners depend on navigational aids to direct them from port to port, so do physicians depend on the publications of their medical brethren to point the way toward the ultimate solution of heretofore baffling medical problems. As the mariner navigates from buoy to beacon, so does the physician go from text to journal, gaining knowledge in varying amounts but always progressing to his ultimate destination.

The articles pertaining to anesthesiology which appear in this and the following issue of *Connecticut Medicine* were written by clinicians whose aim was to bring to the general medical populace some knowledge derived from their practice of the specialty. I doubt that within these articles there is anything which could be construed as revolutionary. They simply represent a sincere effort to acquaint the medical public with some areas in which our interests overlap. This effort may be prompted by the notion that since anesthesiology is usually practiced in the secluded chambers of the operating suite, few physicians have much awareness of our problems. A secondary motivating factor is that these authors have a personal interest in the subjects about which they have written.

Their interest in these chosen areas has been prompted by a variety of reasons, perhaps the most compelling of which was the unsuspected outcome of what was otherwise an "ordinary case." Driven onward by the compelling desire to acquire more knowledge and, even more importantly, to prevent a recurrence of similar situations, they delved more deeply into their partic-

ular areas of interest. The following articles represent the results of their efforts.

I congratulate all of them on their endeavors. It is not easy for the busy clinician to find either the time or the energy to write. It would be our wish that what they have written will somehow add to our general fund of knowledge and, in the words of Mr. Hammarskjöld, "stir the strings of expectation."

Edmund T. Welch, Jr., M.D.,

Director, Department of Anesthesiology
Hartford Hospital

Guest Editor

Health Counseling for Today's Needs

Practicing physicians know that large proportions of their patients do not follow their instructions or advice and public health officials have discovered that much of the public pays little attention to their warnings, dire as they may be.

The problems of health counseling have received little attention. It could be that concern about one's health is an acquired rather than a natural characteristic of humans. After all, the healthy person "feels good" and has no symptoms which draw his attention to his body or its functioning. This is the natural state and this lack of concern may be the natural attitude toward health. But concern with one's health can be acquired through losing it or the fear of losing it or by being convinced on the basis of some logic that one should do something to enhance or prolong this natural state. In any case, the concern seems to be acquired and in this sense is an unnatural characteristic. Emotions and feelings are more basic than reason and humans tend to be more emotional than rational. The person who feels well, or who begins to feel well again, believes everything will be all right and therefore shows poor compliance with health counseling.

It is a clear need for more work to be done on this multifaceted problem. A rational motivation strong enough to carry the day must be found whatever health counseling is to be undertaken. (Editorial from *Western Journal of Medicine*, February 1974).

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* Hammarskjöld D: *Markings*. Alfred Knopf, Inc., 1965.

Letters To The Editor

Letters to the Editor are welcomed and will be published, if found suitable, as space permits. Like other material submitted for publication, they must be typewritten *double spaced* (including references), must not exceed 1½ pages in length and will be subject to editing and possible abridgment.

MALPRACTICE

To the Editor: In spite of malpractice, doctors still have to take responsibility for patients even when the prospect of a good result appears hopeless. Meanwhile lawyers pontificate that malpractice would stop if doctors would only practice good medicine, and so laws about disciplinary action against "incompetent" physicians are formulated.

But the malpractice epidemic actually exists only because it is free from risk or cost and it is very remunerative. With the "contingent fee" (the understanding that the lawyer will receive one-third of any settlement) it costs the plaintiff nothing to start making trouble. Then, after a lawyer has put his own investment into determining the feasibility of action, he feels impelled to seek the highest possible return on the investment. The allegations then become wild, and the damages demanded go sky-high.

At this point the expectations of both plaintiff and attorney take on the aspect of conspiracy. They are together in hoping to make as much as possible from the attack on the doctor. In the past the "conspiracy" aspect was fully recognized in Common Law; it was considered a crime and was called Champerty. Canadian lawyers recognize that historic fact and regard the contingent fee as unethical. And for this reason, there is no malpractice epidemic in Canada.

With the zeal of the plaintiff's attorney aroused, he feels noble in going-for-broke. So in the courtroom, with the doctor-defendant in the witness chair, the lawyer flays the witness like a common criminal. He snares the witness with a web of contradictory questions to which only "yes" or "no" answers are demanded, and by weaving together a series of half-truths, catches up with a seeming inconsistency in the doctor's testimony. For various reasons, the doctors are considered as fair game to be picked as clean as possible. Meanwhile the court process may drag on for weeks with the doctor away from his practice.

If the correction of torts is really a pressing social necessity it should be carried out by a plaintiff's attorney, who like the prosecuting attorney, is a public servant. As a private practitioner the lawyer has the incentive to seek unconscionable, astronomical damages which have no moral justification. Doctors should organize political action to accomplish two things: To make the contingency fee again champertous, and make the plaintiff's attorney a government employee.

The "Res ipsa loquitur" ghost should also be exorcised. It is based on maudlin pity for someone who wants money which will have to be given by someone who is supposed to be able to afford it. If something really "speaks for itself," it never gets to court. Stating something in Latin does not make it so.

The recent oddities of judicial process have coddled criminals and awarded confiscatory largesse. With disease going down and the crime rate going up, the law needs reform more than medicine needs disciplinary actions.

Archaic English law concerning torts, combined with Canadian legal ethics, is culturally workable. But when English law is combined with pragmatic enterprise here to go after waiting windfalls of insurance money, we have the malpractice frenzy which prevails today.

It is not generally known that the malpractice costs are 6 billion annually. But the total of malpractice claims, swollen as they are, are only one-twentieth of those costs, or 300 million. With that proportion the host-parasite relationship between Medicine and the Law is too expensive to sustain. Profit by plunder is wasteful and piratical.

Sidney Vernon, M.D.

Willimantic, CT.

IN SUPPORT OF REASON

To the Editor: The commentary lucidly articulated by President Guy Van Syckle in the December issue of this *Journal* deserves dissemination to similar journals representing the various state and county medical societies. Dr. Van Syckle has clearly described the state of past and current confusion in relation to health matters at the federal level. Our own experiences with the inadequacies of Medicare, particularly as they relate to the non-hospital needs of the recipient, the distortions implicit in quality—assurance as relating to PSRO provisions and the new confusions engendered by HSA in our own state, should make clear to all that a separate, responsible, and responsive Department of Health with cabinet representation must be a prime goal for medicine in 1976.

The time is long overdue for each of us to enunciate our intent to cooperate in a system which is, through effective leadership, representative of the interests of both consumer and provider. The honest concerns of the physician in practice must be heard, health care must continue to reflect quality, and the needs for efficiency, education, and cost accountancy can not be dismissed by assuming that legislative leadership can accomplish this without direction from the grass roots practitioner.

Melville G. Magida, M.D.

Stamford, CT.

OUT-PATIENT CATARACT

To the Editor: This is to congratulate you and the Editorial Board for making *Connecticut Medicine* such an outstanding Journal.

The January 1976 issue in its entirety was excellent. The problems in psychiatry, and the editorial, concerning them were fine.

It occurs to me that ophthalmology has a similar crisis, which may not be recognized. Dr. Galin's article recommending cataract surgery as an out-patient procedure, makes that point. This has been done in a few places for twenty-five years, but that did not change the procedures of the dedicated "Medical Model" ophthalmologists.

Should Dr. Galin belong to the "Social Model" of ophthalmologists, could you arrange to publish "equal time" for the ophthalmic surgeons who live and practice by the rule "that the eye is the most valuable and delicate organ"?

With kind regards,

Henry L. Birge, M.D.

East Hartland, CT.

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Month in Washington

President Ford's all-out attack against rising government spending sustained a major blow with the Congressional override of his veto of a \$45 billion health, welfare and labor bill.

The vetoed bill called for \$1 billion more than the Administration's budget request and required hiring of 8,000 more Health, Education, Welfare Department employees. Almost \$800 million of the increase involves health programs which would receive a total of \$3.9 billion for the fiscal year that ends September 30.

Both houses of Congress exceeded the two-thirds vote necessary to override a veto. The tally was 310 to 113 in the House; 10 to 24 in the Senate.

The Administration defeat came despite a last-minute administration offer to compromise by more or less splitting the difference for a \$500 million increase.

Ford had said in his veto message the bill was "a classic example of unchecked spending." But Democrats charged the money measure would cut spending below last year's level and not meet inflation-caused increases.

The bill provides more funds for such programs as Community Mental Health Services, Maternal and Child Health, medical research, Alcoholism and Drug Abuse Facilities, Emergency Medical Services, and education of health professionals.

The Congressional vote was preceded by all-out efforts on both sides to line up votes and by vigorous lobbying from affected outside groups.

The HEW money bill is considered the hardest to vote against in Congress because of the multitude of popular programs funded. Asked how the House was able to muster such a vote to override including dissident Republicans, House Majority Leader, Thomas O'Neill, Jr., (D-Mass.) replied simply, "the coming election."

House Majority Whip, Representative Robert Michel, (R-Ill.) told the House in the debate that it would be "setting the spending tone for the session."

* * *

Officials of the American Medical Association have met with President Ford and his top health officers to discuss a wide range of health topics including the Administration's new health proposals and federal regulation problems worrying the physicians of the country.

The 45-minute meeting in the Cabinet Room at the White House was described by participants as friendly. "The President listened with interest to what we had to say and his attitude seemed to be sympathetic," said AMA President, Max H. Parrott, M.D.

*Prepared by The Washington, D.C.,
Office of the American Medical Association.*

Dr. Parrott said President Ford noted the pressures he is facing to take positions that might disturb some physicians. The Chief Executive made a point of urging the AMA and members of his Administration and White House staff to confer often to resolve differences.

Among the subjects discussed were the President's State of the Union and Budget Health Proposals, government regulations affecting physicians, the Federal Trade Commission move to allow physicians to advertise, costs of medical care, and medical manpower.

President Ford was told that his recommended annual four percent limit on physician reimbursement increases under Medicare poses real problems with the medical profession which must adjust to higher costs of doing business yearly as well as the ever-climbing costs of professional liability insurance.

Ford indicated he understood the viewpoint of the profession on the matter and proposed that Administration officials and AMA representatives meet further on the issue.

The AMA delegation told Ford about the AMA's National Commission on the Cost of Medical Care and invited the President to appoint a representative of his Administration to serve as a member.

There was considerable talk about the supply of physicians, with President Ford evincing special interest in the Foreign Medical Graduate situation and the problems of Americans studying medicine abroad. The AMA officials described the increasing numbers of young physicians entering primary care, now 58 percent.

The AMA's support of the National Health Service Corps as a principal means of helping physician-short areas was outlined. The voluntary incentives in this program were compared with the "indentured service" aspects of health manpower legislation before Congress that would compel young physicians to serve or to payback the government for federal aid received by medical schools.

In reply to a question from Ford, the AMA delegates noted the organization's support of federal medical scholarships.

The controversial Utilization Review Regulations were talked about. HEW Secretary Mathews was complimented by the delegation for his reasonable approach and willingness to work with the profession to reach agreement on these rules.

President Ford was told that the AMA could find no scientific basis for the disputed Maximum Allowable Cost proposals for Medicare-Medicaid outpatient drugs. The MAC plan could lead to interference

in the practice of medicine by restricting the physicians' prescribing scope and could hurt the quality of health care, the AMA officers said.

The FTC suit to overturn the AMA ban on physician advertising will be contested in court, the AMA asserted. The AMA was founded in part to do away with abuses of charlatans and advertising of physicians' services, the Chief Executive heard.

The President sought support for his health programs and expressed confidence the Administration and the representatives of the medical profession could work together to iron out differences and reach accommodations.

* * *

Mandatory second professional opinions have been urged for elective or non-emergency surgery under Medicare and Medicaid by a House Commerce Subcommittee.

The Subcommittee on Investigations and Oversight, which held hearings last fall on unnecessary surgery, charged in a report that there were an estimated 2.4 million unnecessary surgeries performed in 1974 at a cost to the public of almost \$4 billion. The procedures led to an estimated 700 deaths, the report said.

Contending that second consultations could cut down "significantly" on unneeded surgery, the Subcommittee, headed by Representative John Moss (D-Calif.) said "such a program would save the government millions of dollars."

Arguments that second opinions would cost money and not necessarily provide a solution and expert assertions that it is difficult to determine what constitutes unnecessary surgery were brushed aside by the Subcommittee in its strongly-worded report.

The report said the lawmakers were impressed with evidence "that prepayment plans for consumers and salaried surgeons help reduce surgery in equivocal situations."

"Evidence was compiled in the Subcommittee's investigation that the fee-for-service mechanism of surgical payment encourages surgery in questionable situations," the report said. "An in-depth study of this should be undertaken" by the HEW Department.

The Subcommittee recommended that HEW immediately undertake a study to determine the differences in health indices, costs and the surgical procedure rates between salaried surgeons and fee-for-service surgeons.

* * *

Legislation to amend the Health Maintenance Organization (HMO) program "would effectively gut the

HMO concept and subvert the original intent of the program," the AMA has told the Senate.

Edgar T. Beddingfield, M.D., Vice-Chairman of the AMA's Council on Legislation, said the House passed HMO amendments "remove important comprehensive services and eliminate characteristics which distinguish the HMO from other prepaid group practices."

The AMA witness testified on the final day of hearings on changes in the HMO program. The House bill eliminates many of the benefits stipulated in the original HMO bill and makes other changes designed to make it easier to set up and operate such pre-paid health systems.

Dr. Beddingfield said the House bill in effect converts a demonstration health delivery program into a mechanism for the federal funding of ordinary prepaid groups.

"If in fact the HMO is to be no different from prepaid groups which have existed without federal funding, then we submit there is no justification for federal funding under the guise of experimentation or otherwise."

* * *

Congress has buttressed the medical and hospital professions' case against the Utilization Review Regulations originally promulgated by HEW.

The lawmakers approved with no dissent a provision making it clear that Congress never intended to require 100 percent review of all Medicare-Medicaid hospital admissions, a key part of the controversial UR Regulations issued by HEW.

The AMA has challenged successfully the UR Regulations in court. The HEW Department is slated soon to issue revised regulations after court-ordered negotiations with the AMA.

One of the major arguments against the Regulations was that HEW had reached beyond Congress' intent in carrying out the review program. Congress' vote on the amendment to the Medicare-Medicaid laws appeared to back up the protests of the AMA and the American Hospital Association.

Sen. Paul Fannin (R-Ariz.) told the Senate that the original regulations calling for direct review of each Medicare-Medicaid admission "is beyond the scope of what we intended. . . ."

Chairman Russell Long (D-La.) of the Senate Finance Committee said "the idea of requiring that everything in a claim be reviewed is not what we had in mind when we passed the law. It is a technical error that should be corrected, otherwise, there would be needless cost and a great deal of unnecessary paperwork."

**184th ANNUAL MEETING
CONNECTICUT STATE MEDICAL SOCIETY
HARTFORD HILTON HOTEL
10 Ford Street, Hartford, Connecticut
April 28, 29, 1976**

**PRELIMINARY PROGRAM
WEDNESDAY, APRIL 28
ANNUAL MEETING OF THE HOUSE OF DELEGATES
BALLROOM— — — MEZZANINE**

Presiding: Timothy F. Nolan, Greenwich, Connecticut, Speaker of the House;
David A. Grendon, Sharon, Connecticut,
Vice-Speaker of the House.

7:30 Registration of Delegates

8:30 Call to Order—Opening Session
Reference Committee Hearings

1:15 Luncheon—Terrace Room, Mezzanine

3:00 Call to Order—Final Session

6:15 Adjournment

**ANNUAL DINNER OF THE SOCIETY
Wednesday, April 28**

6:30 Social Hour

7:30 Dinner

**THURSDAY, APRIL 29, 1976
GENERAL SCIENTIFIC PROGRAM**

MORNING SESSION

8:15 REGISTRATION—Hotel Lobby

8:30-10:00 MEETINGS OF SECTIONS OF THE
SOCIETY AND GUEST ORGANIZA-
TIONS

10:00 INTERMISSION TO VISIT EXHIBITS

BALLROOM

10:20 CALL TO ORDER AND WELCOMING
REMARKS

President,
Connecticut State Medical Society

10:30 PANEL ON HYPOGLYCEMIA—FADS,
FACTS AND FICTION—IS THIS WHY
JOHNNY CAN'T READ OR COPE?
Moderator: Philip Felig, New Haven, Conn.

PHYSIOLOGICAL APPROACH TO HY-
POGLYCEMIA
David M. Kipnis, St. Louis, Mo.

A HISTORICAL PERSPECTIVE OF
HYPOGLYCEMIA
Ronald A. Arky, Cambridge, Mass.

DISCUSSION: QUESTIONS AND AN-
SWERS

12:30 INTERMISSION TO VISIT EXHIBITS

1:00 LUNCHEON—Terrace Room

**AFTERNOON SESSION
BALLROOM**

2:00 PANEL ON FADS, FACTS AND FICTION
OF ESTROGEN THERAPY, IS IT RISKY?
Moderator: John McLean Morris,
New Haven, Conn.

GYNECOLOGICAL ASPECTS
Walter L. Herrmann, Seattle, Wash.

MEDICAL ASPECTS
Bruce F. Bower, Hartford, Conn.

DISCUSSION: QUESTIONS AND
ANSWERS

4:00 INTERMISSION TO VISIT EXHIBITS

4:30 MEETINGS OF SECTIONS OF THE SO-
CIETY AND GUEST ORGANIZATIONS

FROM THE EXECUTIVE DIRECTOR'S OFFICE

160 St. Ronan Street, New Haven, Conn. 06511
Telephone 865-0587

Francis G. Sweeney
*Assistant Executive Director
Public Affairs*

William R. Richards, M.D.
Executive Director
Josephine P. Lindquist
Associate Executive Director

Leonard R. Tomat
*Assistant Executive Director
Scientific Activities*

CALL ANNUAL MEETING OF THE HOUSE OF DELEGATES

The 1976 Annual Meeting of the House of Delegates will be held at the Hartford Hilton Hotel, Hartford, commencing at 8:30 A.M. on Wednesday, April 28.

Guy W. Van Syckle, President
Timothy F. Nolan, Speaker of the House
Louis C. Backhus, Secretary

INTRODUCTION OF RESOLUTIONS

Article V, Section 12, Par. 3 of the Bylaws of the Society Provides:

Resolutions may be introduced by any Active or Life Member of The Society, in compliance with the following provisions.

- a. All resolutions, reports and similar items of business submitted in writing and received at the office of the Executive Director not later than thirty days before the date scheduled for that meeting shall be considered as regular business of the House of Delegates.*
- b. Component county associations whose meetings are held later than thirty-five days prior to the date of the House of Delegates shall be allowed five days after the close of such meeting in which to submit resolutions, reports and similar items of business to the Executive Director's office and still have such material considered as regular business. In no event, however, may such resolutions, etc. be considered regular business if they are received later than fifteen days prior to the date of the meeting.*
- c. Reports, recommendations, resolutions or other new business may be presented to the House of Delegates by the Council of The Society at any time and shall be considered as regular business.*
- d. Any business which does not qualify as regular business in accordance with the foregoing provisions may be accepted for consideration by a majority vote of the delegates present and shall be referred at once by the Speaker to a reference committee. When business is introduced under the provision of this paragraph the vote shall be taken without debate, except that the introducer shall be allowed not more than two minutes to explain why it should be considered as regular business.*

PROPOSED AMENDMENTS TO THE BYLAWS

The following proposed amendments to the Bylaws were presented to the House of Delegates at the Semi-Annual Meeting held on November 19, 1975 and were tabled for consideration and action at the next regular meeting of the House of Delegates.

In accordance with the Bylaws, these amendments will be published in *Connecticut Medicine* "on one or more occasions prior to the next meeting. . . at which meeting the amendments shall be taken off the table and acted upon by the House of Delegates."

UNIFIED MEMBERSHIP

(Introduced by E. Tremain Bradley, Norwalk)

Purpose: To have unified membership" in Connecticut; i.e., that membership in any unit of organized medicine be contingent upon membership in all units—County, State and AMA.

The words of the proposed amendment (by addition) are published in capital letters.

ARTICLE IV—MEMBERSHIP

Section 1. Active Members

Par. 1. Active Membership shall be limited to those members of component associations who are certified to the Executive Director of The Society as entitled to exercise all rights of membership in their county associations including the rights to vote and hold office. ACTIVE MEMBERSHIP IN THE SOCIETY OR A

COMPONENT COUNTY ASSOCIATION SHALL BE CONTINGENT UPON MAINTAINING A UNIFIED MEMBERSHIP IN A COMPONENT ASSOCIATION, IN THE SOCIETY, AND IN THE AMERICAN MEDICAL ASSOCIATION. A physician eligible for Active Membership in The Society becomes an Active Member of The Society on receipt by the Executive Director of The Society of dues prescribed by The Society unless he is exempted from payment of dues as provided in Article XII.

MANDATORY CONTINUING MEDICAL EDUCATION

(Approved by House of Delegates 11/19/75)

Purpose: To make continuing medical education a requirement for membership in the Society.

The words of the proposed amendment (by addition) are published in capital letters, and are being submitted by the Council at the direction of the House of Delegates.

ARTICLE IV—MEMBERSHIP

Section 1. Active Members

Par. 1. Active Membership shall be limited to those members of component associations who are certified to the Executive Director of The Society as entitled to exercise all rights of membership in their component associations including the rights to vote and hold office. A physician eligible for Active Membership in The Society becomes an Active Member of The Society on receipt by the Executive Director of The Society of dues prescribed by The Society unless he is exempted from payment of dues as provided in Article XII. ACTIVE MEMBERSHIP IN GOOD STANDING IN THE SOCIETY SHALL BE CONTINGENT UPON THE ACTIVE MEMBER, IF IN ACTIVE MEDICAL PRACTICE, BEING CERTIFIED TO THE EXECUTIVE DIRECTOR OF THE SOCIETY AT SUCCESSIVE THREE-YEAR INTERVALS AS HAVING COMPLETED AT LEAST 150 HOURS OF ACCREDITED CONTINUING MEDICAL EDUCATION DURING EACH PRIOR THREE-YEAR PERIOD, USING THE STANDARDS AND RECORDING MECHANISMS OF THE PHYSICIAN'S RECOGNITION AWARD PROGRAM OF THE AMERICAN MEDICAL ASSOCIATION.

Summary of Actions

Council Meeting

Thursday, January 29, 1976

I. Attendance

Present in addition to the Chairman, Dr. D. A. Grendon, and the Vice Chairman, Dr. J. K. Freedman, were: Drs. Van Syckle, Spitz, Friedberg, Johnson, Backhus, Nolan, Root, Jr., Hess, Bradley, Cramer, Fabro, Granoff, Canzonetti, Rubinow, Ragland, Jr., James, Sonnen, McGarry, Beck, Robinson, Harkins, Mendillo, Eslami and Barrett.

Also present were: Mrs. Lindquist, Mr. Tomat, Mr. Martel (FCMA) and Dr. Richards.

Absent were: Drs. Kamens, Magram, Klare, Krinsky, Dambeck and Bird.

II. Routine Business

Approval of Minutes

As published and distributed, it was VOTED to approve the minutes of the meeting of December 17, 1975, with amendments made as follows: Under "Resignation, Appointments, Etc."—"It was VOTED to appoint George H. Bonner, New Haven, as a representative of the Society to the Connecticut Medical Institute, replacing James H. Kenney, New Haven, resigned." (In error, the minutes reported that action on Dr. Bonner's appointment had been tabled); Under "Further Consideration—Libel/Slander Insurance for CSMS Publications"—"It was VOTED to table action on the *entire* matter indefinitely . . ." (In error, the minutes reported that the Journal Editor had been authorized to implement suggestions (a) and (b) offered by an insurance agent).

Life Memberships

It was VOTED to approve applications for Life Membership received from the following eligible Active Members:

Julianna Burns, P.O. Box 111, Hadlyme
Forrest D. Gibson, 8 White Oak Road, Farmington
G. S. Gudernatch, Main Street, Sharon
Albert L. Larson, 104 Reverknolls, Avon
Tage M. Nielsen, 425 Montauk Avenue, New London
Joseph A. Reynolds, 54 Central Avenue, New Haven
Robert M. White, 685 Grassy Hill Road, Orange

Election of Student Members

It was VOTED to elect to Student Membership in the Society eleven Connecticut residents who are enrolled in U.S. medical schools: The names of those elected will be published in an early issue of the Journal.

III. Old, New and Special Business

Appointments, Resignations, Etc.

- (a) *Committee on Continuing Medical Care and Rehabilitation*: It was VOTED to accept the resignation of Sung J. Liao, Middlebury, from membership on the Committee.
- (b) *Committee on Mental Health*: It was VOTED to accept the resignation of Donald L. Brown, Hartford, from membership on the Committee (Term: 1974-79). It was further VOTED to appoint Granville M. Winship, New Britain, to membership on the Committee for the balance of the term 1974-79.
- (c) *Liaison Committee with the State Department of Social Services*: Having received an opinion of the Commissioner of Social Services that there should be greater representation of minority groups among the members of the Liaison Committee, it was VOTED to inform the Commissioner that his observations have been referred for guidance to the Nominating Committee when it meets to make nominations for Committee membership (in 1976-77) to be elected by the House of Delegates on April 28, 1976.

CSMS Participation in "Connecticut Cancer Federation"

It was VOTED to approve a recommendation of E. Tremain Bradley, chairman of the Cancer Coordinating Committee, that the Society participate in the formation and functioning of a "Connecticut Cancer Federation." The concept of the Federation has been developed by the "Connecticut Cancer Consortium"—an informal group of representatives of agencies interested in cancer research, services, training, education, etc. in which the Society already participates actively.

In a related action, the Council VOTED that letters, signed by the President, be sent to Governor Grasso and Finance and Control Commissioner Tepper urging them to look favorably on and take appropriate action in support of a prior commitment of the State to contribute \$1.2 million in matching funds to assure that Connecticut Comprehensive Cancer Center remains eligible to receive Federal funds that will make possible the orderly and progressive development of the Center.

Report on AMA-ANA 2nd National Conference on Joint Practice

It was VOTED to receive as information a report filed by Robert L. Madison, Stamford, on the proceedings of the subject Conference, 1975. Dr. Madison attended as a representative of the Society.

Stemming from this report, it was further VOTED to approve a statement on the subject of the need for physicians and nurses to jointly examine the changing and emerging new roles of the two professions in the delivery of high quality health care., submitted by the Connecticut Joint Practice Committee (composed of the CSMS Committee on Allied Health services and representatives of the Connecticut Nurses Association), and to approve the mailing of a subject questionnaire to the administrator, chief of staff and director of nursing in each hospital in the state. It is understood that implementation of these actions is contingent upon similar approval by the Board of Trustees of the CNA.

Recommendation re Promoting "Unified Membership"

It was VOTED to receive as information a communication from J. Alfred Fabro, Torrington, AMA Delegate, which asked for Council approval of a series of suggested activities designed to promote favor among the Society's members for "unified membership"; i.e., a requirement that for a physician to hold membership in any unit of organized medicine (county association, state society, AMA), he/she must hold membership in all three. The Council VOTED further to approve for implementation five of Dr. Fabro's suggestions as follows: (1) Invite an AMA spokesman to address the House of Delegates on 4/28/76 on the subject of unified membership, before a vote is taken; (2) Ask County Association boards or executive committees to invite members of the Connecticut AMA Delegation to speak to them on unified membership, preferably at a special meeting; (3) For the same purpose, ask County Associations to invite members of the Connecticut AMA Delegation to address the general membership at 1976 annual meetings, requesting a scheduled spot on the program and a set time period; (4) The Editor will continue to feature articles and "fillers" about AMA and unified membership in the Journal; (5) Insert material about unified membership in the envelope in which the Council minutes, etc. are mailed to members of the House of Delegates on an approximately monthly basis. Acting on Dr. Fabro's sixth suggestion re determination of the "legality" of unified membership, the Council VOTED to instruct the Council Chairman to request the AMA Legal Department for an opinion regarding the legality of "unified membership" in Connecticut, as generally understood and now adopted by several state medical societies. The Chairman's letter of request will be accompanied by a copy of the Society's Charter and Bylaws, a copy of the CSMS-Aetna Professional Liability Insurance Program brochure and

information regarding the matter of mandatory continuing medical education as it will be acted on by the House of Delegates on 4/28/76. Further, that if the AMA Legal Department's subject opinion (re legality) is in the negative, the Department be asked to suggest changes and/or amendments to the CSMS Charter and/or Bylaws which would make unified membership legally permissible in Connecticut.

Acting to implement suggestion (1) above, the Council further VOTED to invite Dr. James H. Sammons, AMA Executive Vice President, to attend the 1976 annual meeting of the House of Delegates and address the House on the subject of unified membership before the House votes on the question.

Report—Committee on Professional Liability

It was VOTED to receive as information a report filed by the Committee which informed the Council that the Committee "is cooperating with the Connecticut Hospital Association and the Aetna by participating in five joint meetings of hospital trustees, medical staffs, administrators and auxiliary presidents" to discuss professional liability loss control and educational programs in health care facilities. The report also informed the Council that, at a meeting of CSMS representatives and Connecticut Bar Association representative, the attitude of the Bar toward a number of CSMS legislative objectives was favorable and encouraging.

Report on Special Activities— AMA Clinical Convention

It was VOTED to receive as information a subject report, prepared by Mr. Tomat, which covered: (a) A joint meeting of representatives of state medical societies that sponsor malpractice insurance programs administered by Aetna (there are eight, of which six were represented) at which experiences with the respective programs were shared; and (b), The "Follow-up of Cancer" brochure exhibit. It was further VOTED to commend Dr. E. Tremain Bradley, Mrs. Bradley and Mr. Tomat for their contributions of service which made the cancer brochure exhibit an outstanding success.

Information Report on AMA Judicial Council Decision

It was VOTED to receive as information a reading of the decision of the AMA Judicial Council following a hearing (Honolulu) of the appeal of a component County Association that the CSMS Judicial Committee had acted improperly in its rulings on the appeals of a member from a disciplinary action taken by the component Association. In summary, the AMA Judicial Council sustained the subject actions of the CSMS Judicial Committee.

The Connecticut Medical Institute, Inc.

The Council members were joined by James D. Kenney, New Haven, recently-resigned President of CMI, and Lawrence K. Pickett, New Haven, who has succeeded Dr. Kenney as CMI President. Each, in his turn, presented his views as to the current status of the Institute and as to what its future course might be. Dr. Kenney recounted the assistance given the four PSROs by CMI during their "planning" phase and the additional help given them in their pursuit of gaining "conditional" status (all four have obtained same). It was his feeling that the wave upon wave of conflicting PSRO regulations which have been imposed by Federal bureaucrats on both the Connecticut PSROs and the Institute contributed to the development of a philosophical and practical schism between the four PSROs and CMI, and that the ultimate ruling of the HEW bureaucracy that the PSROs could not subcontract with CMI for data processing and related services had placed the future usefulness of CMI in grave jeopardy— especially since Federal funding of CMI as a "support center" will terminate at the end of March, 1976. Dr. Pickett confirmed the fact that CMI would run out of money as of March 31 and that there were no firm prospects extant of obtaining funds from either governmental or private sources. He proposed to try to keep together the "consortium" of interested parties which had joined to form the Institute, on an informal basis if necessary, in the hope that it could once again become a functioning organization at a future time—perhaps in relation to the Health Systems Agencies which will be formed in Connecticut during 1976. He mentioned the possibility (and only the possibility) that the Institute might turn for modest financial support to the member agencies that make up the Institute.

Following these verbal presentations, the Council VOTED to receive them as information and to express thanks and appreciation to Drs. Kenney and Pickett for making their respective views known to the members of the Council.

Report—Committee on Continuing Medical Education

It was VOTED to receive as information a report submitted by the Committee which presented two matters for Council decision. On the first of these, the Council VOTED to approve a recommendation of the Committee that the allowable Committee strength be increased from 15 to 20 members, and to recommend approval by the House of Delegates. The second matter presented by the Committee was a request for Council guidance as to whether the surveys for CME accreditation of hospital programs should be funded by assessing a fee on each hospital surveyed or wheth-

er the Society would be willing to underwrite the costs of the survey program. After discussion, and receipt of a favorable report from the Fiscal Subcommittee, it was VOTED to have the Society underwrite the program at an annual level of up to \$250 (as estimated by the CME Committee).

Committee on Cooperation with Medical Schools of Connecticut

Having received a favorable report from the Fiscal Subcommittee, the Council VOTED to allocate up to \$200 to the Committee to be used for the purpose of holding a reception for first year UConn medical students at which, among other things, the students would be oriented about the UConn-CSMS Preceptorship Program.

Liaison Committee with Connecticut Pharmaceutical Association

Having received a favorable report from the Fiscal Subcommittee, the Council VOTED to approve a recommendation of the Liaison Committee that the Society bear the costs of addressing flyers to the membership publicizing a CSMS-CPA workshop on "Psychotropic Drug Therapy in the Ambulatory Patient."

Committee on Public Relations

- (a) *Bicentennial Program*: The Council VOTED to approve a program recommended by the Committee which would make available to the Connecticut press a history of the Connecticut State Medical Society that would include some of the human interest aspects of medicine over the years together with factual information on the contribution made by CSMS to medical care, to be written by an experienced historical writer, for featured presentation in Sunday editions; also, a proposal to make available a Bicentennial lapel pin to members of the Society on order and at cost. The Council further VOTED, without objection from the Fiscal Subcommittee, to allocate the sum of \$250 to the PR Committee with which to implement the program.
- (b) *Radio Tapes*: Having received a favorable report from the Fiscal Subcommittee, the Council VOTED to allocate the sum of \$500 to the PR Committee for the purpose of taping additional 30 and 60 second health messages to be used to supplement the established program already in being. It was further VOTED to request the Committee to make a report to the Council concerning the known exposure being given to the tapes by the large number of stations to which they have been distributed.

Amendment to Bylaws re Mandatory CME Requirement

It was VOTED to approve for transmittal to the House of Delegates on 4/28/76 an amendment to the Bylaws which would effect implementation of the mandatory CME requirement for membership in the Society that was approved by the House of Delegates on 11/19/75 and will become official upon adoption of the proposed Bylaw amendment by the House on 4/28/76. The amendment (by addition) is published in capital letters as follows:

ARTICLE IV—MEMBERSHIP

Section 1. Active Members

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Progress Report on Defense Against FTC Complaints

It was VOTED to receive as information a report submitted by Mr. Grant Nickerson, Wiggin and Dana, on his meeting with AMA personnel in Chicago on January 14. In brief, he reported that it is the preference of the AMA, with the concurrence of the Society and the New Haven County Medical Association, to assume the leadership role in defending all three organizations against the FTC complaints (which are common to all), thereby avoiding duplication in the matter of legal costs, statements, witnesses,

etc. Since Mr. Nickerson had been instructed by the Council to explore with AMA the feasibility of establishing this arrangement, it was his opinion that its feasibility and reality had been established. It was further VOTED to thank Mr. Nickerson for his report and to reaffirm to him that the Council has complete confidence in him as legal representative to pursue the defense against the FTC complaints on behalf of the Society. It was further VOTED to accept for filing a communication from the President of NHCMA, George A. Bonner, requesting a statement from the Council as to what portion of the legal costs relating to the CSMS-NHCMA defense against the FTC complaints would be borne by the Society. In response to Dr. Bonner's request, and having received a recommendation from the Fiscal Subcommittee, the Council VOTED "that, for the present, CSMS legal counsel continue to represent NHCMA at CSMS expense, but that all communications between NHCMA and CSMS legal counsel be made through the CSMS headquarters office."

N.B.: *The foregoing is a summary of the proceedings and actions of the Council on January 29, 1976. Detailed minutes of the meetings are on file at 160 St. Ronan Street, New Haven, for perusal by any interested member of the Society.*

SPECIAL NOTICES

YALE UNIVERSITY SCHOOL OF MEDICINE

May 6, 1976

Nurse Practitioners and Physician's Assistants in Connecticut: Issues and Prospects

A Symposium

Thursday, May 6, 1976 9 a.m. - 4 p.m.

at the Ramada Inn

201 Washington Avenue

North Haven, Connecticut

Among the objectives of the Symposium is to provide a forum for an exchange of information on the education and utilization of nurse practitioners and physician's assistants, and for the identification of issues relating to the utilization of such personnel in Connecticut. For further information, contact the Office of Regional Activities and Continuing Education of Yale University School of Medicine, which coordinates this Symposium, at 432-4582.

HARTFORD HOSPITAL

Symposium on Access Surgery for Hemodialysis

May 15, 1976

The Department of Surgery, Hartford Hospital and the University of Connecticut School of Medicine will sponsor a symposium entitled "Access Surgery for Hemodialysis," to be held at Hartford Hospital on May 15. The fee is \$20. Further information may be obtained from Dr. Robert Schweizer, Department of Surgery, Hartford Hospital, 80 Seymour Street, Hartford, Connecticut 06511.

In Memoriam

Carpentieri, Anthony L., New York Medical College, 1938. Dr. Carpentieri was a practicing physician in the New Haven area since 1941. He served with the U.S. Medical Corps in World War II and received the Bronze Star decoration. He was a member of the New Haven County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Carpentieri died January 3, 1976, at the age of 63.

Clark, Mildred H., Woman's Medical School, Pennsylvania, 1933. Dr. Clark was a practicing physician in the New Haven area since 1936. She was a member of the New Haven County Medical Association and the Connecticut State Medical Society. Dr. Clark died January 9, 1976, at the age of 83.

Jarvik, Norman E., New York University, 1951. Dr. Jarvik was a general practitioner in the Fairfield area since 1952 and president-elect of the Stamford Medical Society. Dr. Jarvik had been chief of the Department of Family Practice at St. Joseph Hospital and he had been associate chief of the same department at Stamford Hospital. From 1941 to 1945, he served in the Navy and was a lieutenant commander in the Hospital Corps, stationed in the Far East. He was a member of the Fairfield County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Jarvik died January 10, 1976, at the age of 62.

Jung, Ross, University of Toronto, Canada, 1937. Dr. Jung was a practicing physician in the New Haven area since 1965. Dr. Jung served as a medical officer during World War II, in the Canadian Army, and was a major in the U.S. Army Medical Corps. He also served in the European Theatre of Operations, China, and in Japan. He was a member of the New Haven County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Jung died January 11, 1976, at the age of 63.

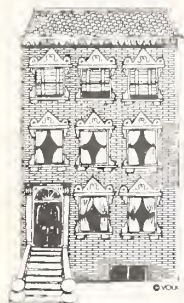
Doctors and Strikes

Two out of every three doctors think they have a right to strike, according to a nationwide poll answered by more than 20,000 physicians. The poll taken by *Modern Medicine* also showed that 59 per cent said they would join a doctor union and 56 per cent said they would treat only emergency cases in the event of a strike. The typical response of doctors in the poll was that they have their "backs to the wall" and they have been "pushed around enough."

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By phone: 239-4911, Ext. 404

By mail: North Haven 06473

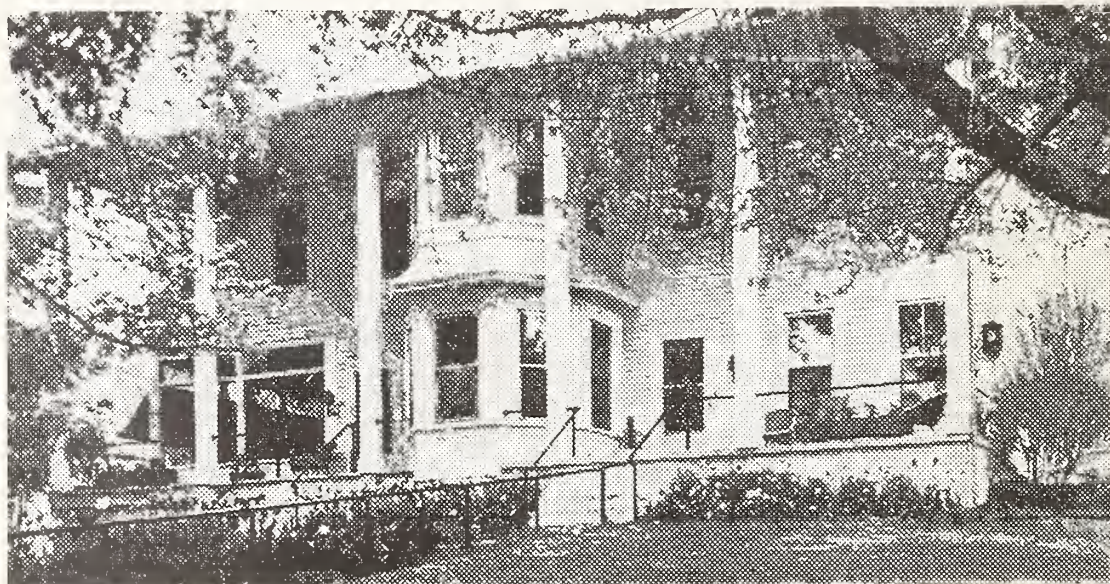


Blue Cross
of Connecticut

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PHYSICIAN PLACEMENT SERVICE

The Society maintains the Physician Placement Service as a service to the medical profession in the State of Connecticut. Opportunities for physicians to locate in Connecticut will be published as space permits and will be distributed to physicians making inquiry of such opportunities. Information should be sent to 160 St. Ronan Street, New Haven, Connecticut 06511, (203-865-6822).

Physicians wishing to establish practice in Connecticut are invited to submit a resume to be kept on file with the Society. An announcement of a physician's availability will be published in two consecutive issues of *Connecticut Medicine*.

PHYSICIANS WISHING TO LOCATE IN CONNECTICUT

General Surgery: Presently on active duty. Available fall of 1976. Board eligible. Trained in the Philippines and at Easton, Pennsylvania and in Virginia. Melvin Q. Antonio, M.D., 14 Inchcliffe Drive, Gales Ferry, CT. 06335.

General Surgery: Presently completing fellowship at Mt. Sinai Hospital in Hartford. Board eligible. Available in July 1976. Trained in Peru, Schenectady, N.Y. and at University of Connecticut. 33 years old. Group or associate practice desired. Alfredo A. Arbulu, M.D., 1471 Willard Avenue, Newington, CT. 06111.

General Pediatric Surgery: Available July 1976. 35 years old. Board eligible. Passed Part I—12/74. Completing training at the Hospital for Sick Children, Toronto. U.S. Citizen. Graduate of Columbia. M.D. from Boston Univ. Internship and residency at Mt. Sinai in N.Y.C. Michael A. Bleicher, M.D., 21 Glengrove Avenue, West, Toronto, Canada, M4R1N5.

General Surgery (Vascular): Completing training at N.Y. Medical College. Available July 1976. Board certified. 32 years old. William Doscher, M.D., 2500 Johnson Avenue, Riverdale, NY. 10463.

General Surgery: Presently in U.S. Army. Connecticut license. Available August 1976. Trained at Yale Medical School and Yale-New Haven Hospital. 32 years old. Board certified. Group or associate practice. Thomas C. Howard, M.D., 811 Dondee Drive, Manhattan, KA. 66502.

General Surgery: Interested in peripheral vascular surgery. Some pulmonary experience. Available now. FLEX. Board certified. American University of Beirut and West Virginia University. W. A. Khuri, M.D., 200 Washington Square, Richlands, VA. 24641.

General Surgery: Board certified. Desires group or associate practice. Available August 1976. 36 years old. Presently in practice. Completed training in the U.S. Navy. Sylvio G. Landry, M.D., 633 Bay Hills Drive, North, Arnold, MD. 21012.

General Surgery: Connecticut license. Available with short notice. Connecticut resident for twelve years. Trained at St. Raphael's and Fordham. Graduate of University of Santo Tomas, Philippines. Write CSMS for complete C.V.

General Surgery and Peripheral Vascular: Available now. FLEX. Board eligible. Taken Part I—A.B. of S. Completed training at Graduate Hospital, University of Pennsylvania. S. R. Bajina, M.D., Suite E.1501, Park Towne East, 2200 Benjamin Franklin Parkway, Philadelphia, PA. 19130.

Urology: Available July 1976. Board eligible. Connecticut license #15126. Completed training in U.S. Navy. M.D. from George Washington University. Internship, residency and fellowship at Vanderbilt. Thomas C. McNamara, M.D., 401 Ocala Court North, Nashville, TE. 37211.

Surgery (Plastic): Available July 1976. Board eligible. Wishes to join another plastic surgeon or a group. Served two years in the U.S. Army. Plastic Surgery residency under Dr. Kelleher at Medical College of Ohio. Mark Handler, M.D., 2417 Hempstead Road, Toledo, O. 43606.

Urology: Board eligible. Available June 1976. 31 years old. M.D. from Georgetown. Residency at Beth Israel in N.Y.C. Solo, group or associate practice. Jonathan N. Goodson, M.D., 350 E. 17th Street, No. 12F, New York, NY. 10003.

Urology: Board eligible. Available July 1976. FLEX. McGill University and Montefiore Hospital in N.Y. C. Trained in renal transplant and hemodialysis. 33 years old. Ek Seng Lou, M.D., 3411 Wayne Ave., No. 72, N.Y., NY. 10467.

Urology: Available immediately. FLEX from VT. Board eligible. Presently at Dalhousie University in Halifax, Nova Scotia. 37 years old. Resume on file at CSMS. A.B.M.

Urology: Available with reasonable notice. Board certified. Prefers group or partnership. Experienced in oncology and chemotherapy. 36 years old. Trained in Calcutta. Did internship at CT. Completed fellowship at Sloan-Kettering Cancer Center, N.Y.C. B. Ray, M.D., 16 W. 465 Mockingbird Lane, Hinsdale, IL. 60521.

Urology: Connecticut license. Board eligible. Wishes to return to Connecticut. Residency at Yale. 36 years old. Completed U.S. Army training. Richard S. Fightlin, M.D., 2989 Alta Laguna, Laguna Beach, CA.

Urology: Board eligible. 32 years old. Available July 1976. Completed 2 years in U.S. Navy. Dartmouth and Johns Hopkins trained. Group or associate practice. Resume available at CSMS.—M.J.B.

Urology: Pediatric and general urology. Available summer of 1976. Board eligible. Presently on active duty. Graduate of St. Louis University. Residency at University of So. Carolina and Mayo Clinic. Robert A. Fraser, M.D., 15 Rose Loop, Ft. Leavenworth, KA. 66027.

Urology: Available July 1976. Board eligible. Connecticut license #15126. Completed training in U.S. Navy. M.D. from George Washington University. Internship, residency and fellowship at Vanderbilt. Thomas C. McNamara, M.D., 401 Ocala Court North, Nashville, TE. 37211.

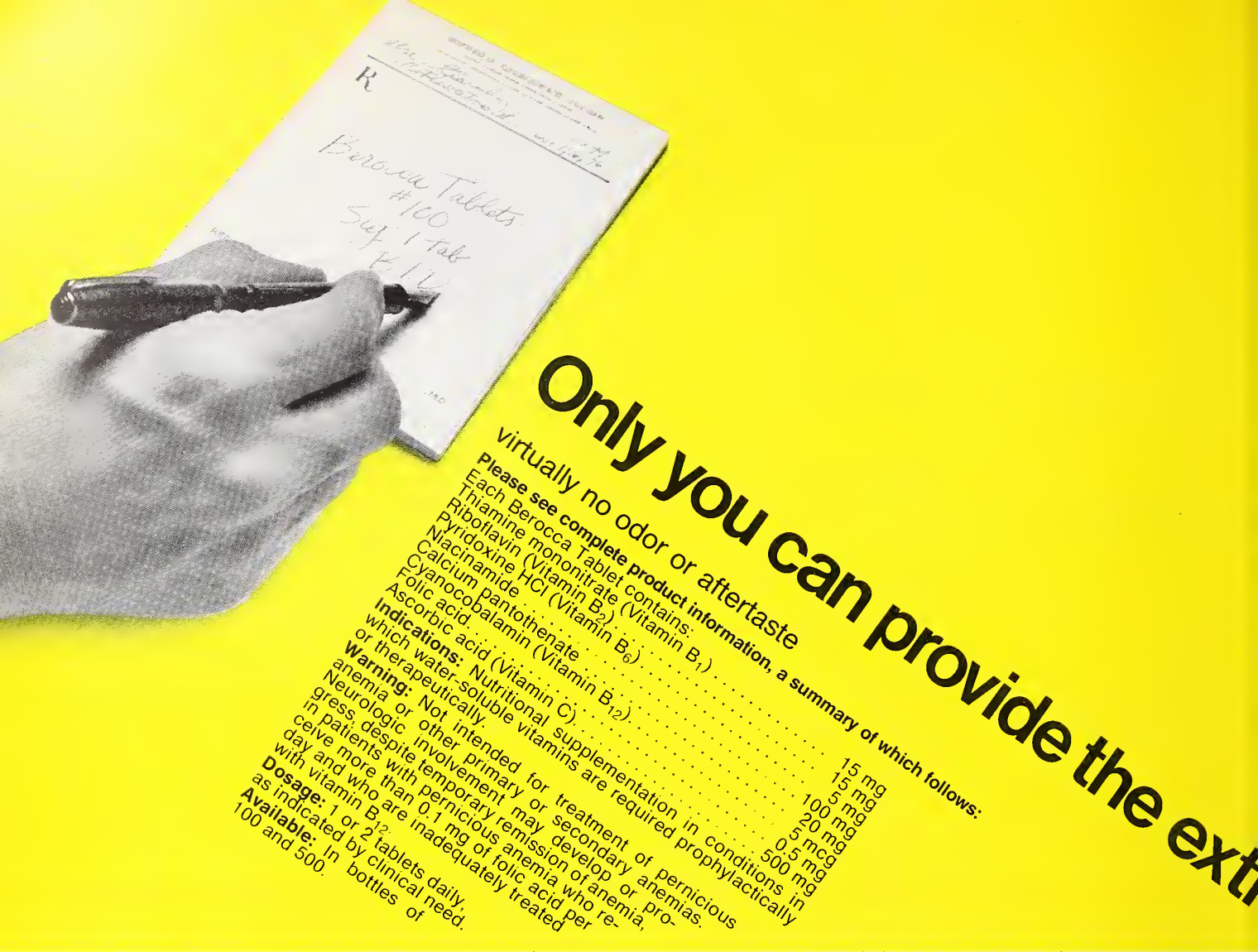
Pediatrics (Neonatology): Available July 1976. Board eligible. FLEX. University of Hong Kong. Presently fellow at Georgetown University Hospital. Taken Part I A.B.P. Raymond K.Y. Chan, M.D., 2911 Dover Lane, Apt. 202, Falls Church VA. 22042.

Pediatrics: Available July 1976. Connecticut license available. Completing residency at St. Francis Hospital in Hartford. Solo or group practice. Yale and UConn trained. Douglas J. Groome, M.D., 133 Woodland Street, Apt. No. 7, Hartford, CT. 06105.

Pediatrics: Available July 1976. Board eligible. Group or associate practice. 28 years old. Roger W. Herman, M.D., 2552 Madison Road, Cincinnati, O. 45208.

Pediatrics: Available July 1976. Completing military service. Board eligible. 29 years old. Prefers group practice in Fairfield County area. Trained at Bellevue and NYU. Jerome H. Isaac, M.D., 2355 W. Michigan Avenue, Pensacola, FL. 32506.

Pediatrics: Available now. Connecticut license. Certified in 1974. Group or associate practice. Trained in India and at the Wesson Women's Hospital in Springfield, Mass. Daniel Israel, M.D., 65 Broad Street, Danielson, CT. 06239.



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Pediatrics: Board certified. Solo or group. Available August 1976. Completing active duty. University of Pennsylvania—M.D. and trained at University of Colorado. George M. McCormick, M.D., H-1 Perry Circle, Annapolis, MD. 21402.

Pediatrics: Prefers coastal Connecticut. Ambulatory care program or group or associate practice. Dartmouth and Harvard trained. Available with 2 or 3 months notice. Board certified. 44 years old. Write CSMS—M.H.M.

Pediatrics: Available July 1976. Interested in pediatric allergy. Board certified. 32 years old. Presently in Air Force. Has spent most of his life in New England and wishes to return east to establish practice. Peter A. Nickles, M.D., 955 Channel Court, Concord, CA. 94518.

Pediatrics: Available August 1976. Interested in group practice. Has special training in behavioral pediatrics. Wishes opportunity to work with children and adolescents having behavior problems. Passed Part I of Pediatric Boards in 1974. Greg Prazar, M.D., 5304 Lantern Court, Baltimore, MD. 21229.

Pediatrics: Available July 1976. Completing fellowship at Albert Einstein College of Medicine. Board certified. Trained in general and acute pediatrics as well as developmental medicine (cerebral palsy, mental retardation, learning disabilities, hearing deficits, speech and language disorders). 33 years of age. Completed military service. Irwin L. Schwartz, M.D., 1925 Eastchester Road, Apt. 19A, Bronx, NY. 10461.

Pediatrics: Available summer of 1976. Board eligible. Group or associate practice. Trained at Yale and University of Florida. Carl D. Sorgen, M.D., 3301 S.W., 13 Street, Apt. A 103, Gainesville, FL. 32608.

Psychiatry: Available July 1976. Board eligible. 31 years old. Presently at Cornell Medical Center. Wife is a Board certified Radiologist. Both wish to practice in same area. Bruce M. Smoller, M.D., 435 E. 70th Street, Apt. 10J, NY. 10021.

Radiology: Available July 1976. Passed Part I for certification. FLEX. Presently at Bronx-Lebanon Hospital as a fellow. Pramod Digamber, M.D., 2451 Webb Avenue, Bronx, NY. 10468.

Radiology: Board certified in Radiology and Nuclear Medicine. Available with 30 day notice. 43 years old. Served in USAF. Special training in Angiography. Lionel D. Ginsburg, M.D., 1250 Los Altos, Long Beach, CA. 90815.

Radiology (Diagnostic): Available July 1976. Passed Part I of American Board of Radiology. Special training in Angiography and Ultrasonography. Resume on file at CSMS.

Radiology: Available July 1976. Board certified. Husband is psychiatrist. Both Cornell trained. Cosette N. Smoller, M.D., 435 E. 70th Street, Apt. 10J, New York, NY. 10021.

Radiology (Diagnostic): Board certified. Presently in practice, but wishes to relocate in Connecticut. Special training in "dry" nuclear medicine and abdominal-obstetrical ultrasound. S.D. Weisbaum, M.D., 364 Glengarry Avenue, Beaconfield, P.Q. H9W1A1, Canada.

Internal Medicine (Rheumatology): Available July 1976. 31 years old. Completed active duty in U.S. Navy. Board certified. Desires to associate with group and/or another rheumatologist. Resume on file at CSMS. R.S.K.

Internal Medicine (Pulmonary Diseases): Presently available. Completed fellowship at University of Cincinnati. 32 years old. Board eligible. Harris Musaffer, M.D., 2275 Winter Parkway, Suite 168, Cuyahoga Falls, O. 44223.

Internal Medicine: Certified ABIM. Available July 1976. Completing active duty in U.S. Army. Interested in small group practice. Cornelius J.P. Sullivan, M.D., 3814 Cadillac Lane, Tacoma, WA. 98499.

Internal Medicine (Nephrology): Board eligible. Associate or institutional practice desired. Available July 1976. Presently completing fellowship at Cleveland Clinic Foundation. 30 years old. M.D. from University of Ottawa. Pierre Berthiaume, M.D., 3423 Elmwood, Cuyahoga Falls, O. 44221.

Internal Medicine (Cardiology): Presently in practice. Wishes to relocate in Connecticut. Board eligible. 51 years old. Special interest in preventive cardiology. Oliver B. Bond, M.D., P.O. Box 5502, Towson, MD. 21204.

Internal Medicine (Gastroenterology): Certified by ABIM. FLEX. Completing fellowship at Massachusetts General. Available July 1976. Resume on file at CSMS. M.F., M.D.

Anesthesiology: Board eligible. Available July 1976. Completing residency at Bronx Municipal Hospital, N.Y. License. Taiwan University Medical School. Li-Cheng Yeh, M.D., 3990 Bronx Blvd., No. 6D, Bronx, NY. 10466.

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Endocrine Hypertension

Bruce F. Bower, M.D.

Abstract—Endocrine disorders may result in hypertension and account for a small but significant group of the hypertensive population with specific disorders and specific modes of therapy. Failure to recognize patients with endocrine hypertension often results in poor treatment response and precludes the possibility of definitive cure. Simple screening studies are available which in combination with a high level of clinical suspicion permit diagnosis of these remedial conditions. In addition, in the larger group of patients with essential hypertension, recognition of secondary abnormalities in the renin-angiotensin-aldosterone regulatory system is useful in terms of determination of prognosis and selection of specific anti-hypertensive therapy.

Hypertension is a common clinical disorder, the frequency and severity of which has been previously emphasized in this series. It is estimated that 23 million patients in the United States have significantly elevated blood pressures, a figure which represents approximately 20 per cent of the adult population.

A variety of endocrine abnormalities can lead to hypertension. Although relatively uncommon, recognition of endocrine hypertension is important for several reasons. First, patients with endocrine hypertension generally fail to respond to non-specific anti-hypertensive therapy unless the underlying endocrine disorder is correctly identified and specific treatment instituted. In addition, recognition and study of patients with primary endocrine hypertension have significantly enhanced understanding regarding the pathophysiology of blood pressure regulation in the much larger group of hypertensive patients with non-endocrine essential hypertension. Finally, it is now recognized that secondary involvement of the adrenal-renal-endocrine regulatory system occurs commonly in many patients with essential hypertension and that this involvement may have significant diagnostic and therapeutic implications. These findings make the evaluation of endocrine systems important both in the diagnosis of primary endocrine abnormalities presenting with hypertension, and in the characterization of endocrine responses in patients

with essential hypertension with respect to risk, prognosis, selection and monitoring of therapy.

The initial discussion will focus on those primary endocrine disorders which produce hypertension. The presentation will succinctly summarize the pathophysiology of the endocrine abnormality, outline initial diagnostic studies which are sufficiently available to be of value on an out-patient basis in the screening of the hypertensive population for endocrine abnormality, and will, in limited detail, deal with therapy. The details of definitive diagnostic studies and therapy are beyond the scope of consideration in this presentation.

Primary Adrenal Disorders Producing Hypertension

No single endocrine system is as intimately involved in blood pressure regulation as the adrenal gland. This finding underlines the central role of the adrenal and its regulatory system in the physiologic regulation of blood pressure and blood volume. A brief discussion of these regulatory systems is appropriate for background understanding of endocrine abnormalities which can give rise to hypertension.

The major adrenal regulators of blood pressure are the mineralocorticoid steroid hormones secreted by the zona glomerulosa of the adrenal cortex. These hormones include aldosterone, but also include other mineralocorticoid adrenal steroids with similar physiologic actions. The principal action of these hormones is to promote tubular sodium reabsorption at a distal tubule sodium-potassium exchange site in the nephron, thus leading to increased sodium reabsorption from the renal tubule and subsequent increased extracellular fluid volume. Under physiologic circumstances this increase in volume is reflected in both increased pressure in the afferent renal arteriole at the glomerulus and increased sodium concentration in the macula densa segment of the distal nephron of the kidney. These areas serve as volume receptors which regulate adrenal mineralocorticoid secretion.

The juxtaglomerular cells are the storage site for renin, a proteolytic enzyme which can be shown by immunochemical techniques to be stored as granules within these cells. Increased plasma volume inhibits the release of renin from these cells, while volume depletion produced by hemorrhage or decreased dietary sodium intake stimulates renin release. Both of these actions are accentuated by upright posture which leads to dependent pooling of plasma volume, further decreasing perceived volume by the juxtaglomerular-distal tubule complex.

DR. BRUCE F. BOWER, Clinical Endocrinologist, Hartford Hospital; Clinical Associate Professor of Medicine, University of Connecticut Health Center, Farmington.

Renin secreted by the juxtaglomerular cells then acts enzymatically on a circulating alpha-2 globulin synthesized in the liver, angiotensinogen, releasing a terminal ten amino acid peptide, Angiotensin I. Angiotensin I is rapidly converted in the circulation into an eight amino acid peptide, Angiotensin II, a powerful vasoconstrictor 10 to 20 times more potent than norepinephrine on a molar basis. This direct vasoconstrictor action is useful in maintaining blood pressure under conditions of volume depletion. Angiotensin II also acts directly on the adrenal cortex to stimulate aldosterone and mineralocorticoid synthesis and secretion further contributing to volume homeostasis by way of increased distal tubule sodium reabsorption. This renin-angiotensin-mineralocorticoid "loop" is the major regulator of extracellular volume. Additional non-volume modifiers of aldosterone and mineralocorticoid secretion include ACTH secreted by the anterior pituitary and the direct effects of serum sodium and potassium concentrations on adrenal mineralocorticoid secretion.

It can be predicted that pathophysiologic disorders might occur that would distort this homeostatic regulatory system. That this is the case will be seen below.

PRIMARY ALDOSTERONISM:

Pathophysiology—Inappropriate and excessive secretion of the aldosterone by the adrenal cortex which can arise as a result of unilateral adrenal adenoma, bilateral adenomatous hyperplasia or very rarely carcinoma. The excessive secretion of aldosterone leads to plasma and extracellular volume expansion and to hypertension. The renin-angiotensin component of the loop is suppressed by excessive and autonomous aldosterone secretion. Excessive renal distal tubular sodium-potassium exchange stimulated by aldosterone leads to increased urinary potassium excretion, depletion of body potassium stores and hypokalemia.

Similar disorders can be produced by autonomous secretion of mineralocorticoids other than aldosterone, such as corticosterone, 11-desoxycorticosterone, and 18-hydroxycorticosterone.

Diagnostic Screening Studies—Serum sodium and potassium determinations on a high sodium diet (dietary sodium intake greater than 100 meq. sodium = 6 Gm. sodium chloride for 3 days) at least two weeks following discontinuation of diuretic or other antihypertensive therapy. Hypokalemia (serum potassium less than 3.0 meq/L.) is suggestive of primary aldosteronism or other mineralocorticoid hypertension. Further diagnostic support is provided by elevated urinary potassium excretion (urinary potassium greater than 30 meq/24 hrs.) in the face of documented hypokalemia. Decreased plasma renin activity* (plasma renin less than 1.0 ng/ml./hr.) is confirmato-

ry. Since plasma renin activity is physiologically suppressed by high dietary sodium intake, plasma renin evaluation in order to be contributory must be done on a low sodium diet (dietary sodium less than 10 meq. sodium = 0.5 Gm. sodium chloride for three days), often in combination with upright posture for a minimum of four hours. Additional plasma renin studies following furosemide induced naturesis may also be employed (furosemide 40-80 mg. p.o. plus upright posture for four hours). Inappropriate elevation of plasma aldosterone or urinary aldosterone is necessary to definitively diagnose primary aldosteronism since 20 per cent of essential hypertensive patients may show suppressed plasma renin.*

Therapy—Both medical and surgical therapy may be employed. Surgical "cure" is possible in selected cases. Medical therapy employing specific inhibitors of mineralocorticoid action on the distal tubule such as spironolactone (approximately 200-400 mg. daily) has also been employed. Side effects are relatively common at these doses and include gynecomastia, impotence and gastrointestinal intolerance. Definitive therapy is surgical adrenalectomy in patients with unilateral adrenal neoplasm. Adrenalectomy in bilateral adenomatous hyperplasia has been disappointing and usually fails to correct the hypertension.

CUSHING'S SYNDROME:

Pathophysiology—The inappropriate secretion of cortisol by the adrenal glands with or without ACTH dependent mineralocorticoids as a result of hypothalamic-pituitary adrenocorticotrophic hormone (ACTH) excess or adrenal adenoma or carcinoma is the hallmark of Cushing's Syndrome. The disorder may also arise from ectopic ACTH production from non-endocrine carcinoma.

Diagnostic Screening Studies—A plasma cortisol obtained at 8 a.m. following 1 mg. dexamethasone p.o. at midnight the preceding evening (plasma cortisol normal less than 4 mcg./100 ml.).

Therapy—The therapy of Cushing's Syndrome remains principally surgical, requiring bilateral adrenalectomy in the presence of hypothalamic-pituitary ACTH excess or unilateral excision of adrenal adenoma or carcinoma where appropriate. Occasional milder hypothalamic-pituitary disorders may be treatable by pituitary radiation or hypophysectomy.

CONGENITAL ADRENAL HYPERPLASIA:

Pathophysiology—An inborn genetically acquired error of cortisol biosynthesis leading to excessive

*Clinical determinations of renin activity measure the amount of angiotensin generated from plasma under specified conditions of incubation. Activity is therefore a function of both enzyme (renin) and substrate (angiotensinogen) concentration.

ACTH stimulation of alternative steroid pathways involved in mineralocorticoid biosynthesis is present in those forms of congenital adrenal hyperplasia producing hypertension. The hypertensive disorders include the 11-hydroxylase and 17-hydroxylase enzyme deficiencies. The 11-hydroxylase disorder is also associated with hirsutism and virilization secondary to associated adrenal androgen overproduction. The 17-hydroxylase disorder produces not only defective cortisol synthesis but also defective androgen and estrogen production. The clinical characteristics of the 17-hydroxylase syndrome in addition to hypertension include the lack of secondary sexual characteristics and primary amenorrhea in affected females and pseudohermaphroditism in affected males.

Diagnostic Screening Studies—24 hr. urine for 17-hydroxycorticoids (normal 2-8 mg/24 hrs.), 17-ketosteroids (normal 5-15 mg/24 hrs.) always including creatinine for monitoring of completeness of urinary collection. Increased 17-hydroxycorticoids and 17-ketosteroids occur in the 11-hydroxylase deficiency while decreased 17-hydroxysteroid and 17-ketosteroid excretion occur in 17-hydroxylase deficiency. Additional screening studies include serum sodium and potassium determinations as well as urinary potassium determination as previously discussed under Primary Aldosteronism. These electrolyte disorders as well as the hypertension can be corrected by 2 weeks of Dexamethasone treatment (Dexamethasone, 0.5 mg. p.o. t.i.d.). This response serves as a diagnostic-therapeutic trial.

Therapy—Replacement of impaired cortisol synthesis by glucocorticoid therapy in the form of hydrocortisone or other glucocorticoid preparations such as prednisone.

PHEOCHROMOCYTOMA:

Pathophysiology—Increased catecholamine production by adrenal medullary neoplasm leading to hypertension which may be either episodic or sustained and which may or may not be associated with clinical evidences of hypermetabolism.

Diagnostic Screening Studies—A single 24-hr. urine collection for metanephrine (normal 0.3-0.9 mg./24 hrs.) or vanillylmandelic acid (VMA) (normal 2-7 mg/24 hrs.) including creatinine for monitoring the completeness of urinary collection. The vast majority of such patients will show abnormal elevations of these catecholamine metabolites in a single 24 hr. urine collection. Rarely a four to 24 hr. urinary collection for catecholamines, metanephrine, VMA and creatinine initiated at the time of spontaneous episodic symptoms may be useful when random twenty-four hour urinary studies are not elevated.

Therapy—Definitive therapy of Pheochromocytoma is surgical excision of the tumor or tumors, since multiple tumors may occur. The latter should be particularly suspected in children or in patients with multiple endocrine adenomatosis Type II in which pheochromocytoma, medullary carcinoma of the thyroid and parathyroid adenoma or hyperplasia occur on a familial basis. In inoperable cases or in patients with non-resectable malignant tumors, the use of alpha-adrenergic antagonists such as dibenzylamine has proved useful.

ESTROGEN-INDUCED HYPERTENSION:

Estrogen therapy is widely prescribed clinically in the form of anovulatory birth control medications and for post-menopausal estrogen replacement. In a small, but significant percentage of patients, significant and occasionally severe hypertension results.

Pathophysiology—Angiotensinogen synthesized in the liver is stimulated by pharmacologic estrogen administration. Increased angiotensinogen synthesis leads to increased angiotensin and resultant increased renin activity and aldosterone production. This effect is seen uniformly in patients receiving pharmacologic estrogen therapy. Only a small percentage of patients treated with estrogens become hypertensive, however, apparently because of the inability of these patients to normalize blood pressure by unknown compensatory depressor mechanisms.

Diagnostic Screening Studies—A careful history regarding exogenous estrogen administration must be sought. Laboratory studies are not helpful.

Therapy—Estrogen therapy must be discontinued in suspected patients. Blood pressure will return to normal over a period of three to six weeks.

Secondary Adrenal Abnormalities and Hypertension

In addition to the primary abnormalities previously discussed, the adrenal gland is involved secondarily in a variety of hypertensive processes of non-endocrine origin. The ability to monitor such changes has been widely studied and can be utilized in the diagnosis, prognosis and selection of therapy for the very much larger group of patients with essential hypertension in whom no primary adrenal etiology is implicated. This evaluation employs the widely available plasma renin activity determinations.

As previously stated, plasma renin activity is a function of sodium balance and dietary sodium intake, increasing in physiologic response to sodium depletion and decreasing when ample dietary sodium is present. At any level of sodium intake, patients with hypertension unrelated to primary adrenal disorders fall into three groups relative to the non-hypertensive

population. The largest number of patients demonstrate normal plasma renin activity values (70%). A significant number demonstrate plasma renin activity higher than normal for any given level of dietary sodium intake and posture, and approximately 20% of hypertensive patients show significantly depressed plasma renin activity. These three functional populations of hypertensive patients are significantly different in terms of etiology, perhaps in prognosis and in their eventual response to specific therapy of the underlying hypertension.

The subgroup of hypertensive patients with elevated plasma renin determinations includes those patients with accelerated essential hypertension, patients with bilateral renal parenchymal disease, and some but not all patients with renal arterial hypertension secondary to renal artery stenosis. In contradistinction patients with low plasma renin determinations include those previously discussed with mineralocorticoid hypertension as well as approximately 20% of patients with essential hypertension and normal mineralocorticoid production, but with unexplained decreased plasma renin activity.

The determination of renal vein renin activity by selective renal vein catheterization is of additional value in the evaluation of patients with suspected surgically correctable unilateral renal artery stenosis and in the diagnosis of unusual patients with tumors of the juxtaglomerular apparatus producing hypertension.

The group of patients with low plasma renin activity appear to have a better prognosis at any given blood pressure elevation than their high renin counterparts in terms of complications of the hypertensive process such as myocardial infarction, renal failure and cerebral vascular disease. Furthermore, the low renin activity subgroup of hypertensive patients respond to treatment with diuretics and mineralocorticoid inhibitors such as spironolactone, together with decreased dietary sodium intake—measures designed to decrease extracellular volume. The high renin subgroup of hypertensive patients respond poorly to such treatment, but much better to propranolol, alpha-methyldopa or guanethidine, agents known to pharmacologically decrease plasma renin activity. These latter agents are usually administered in combination with thiazide diuretics. Thus the treatment of essential hypertension may be individualized rather than initiated on a nonspecific empiric basis.

Non-Adrenal Endocrine Hypertension

ACROMEGALY:

Pathophysiology—Acromegaly is produced by increased growth hormone secretion from the anterior pituitary gland as a consequence of a growth hormone secreting pituitary adenoma. Hypertension is often

accompanied by headaches and changes in the face, hands and feet secondary to growth hormone mediated increased soft tissue growth.

Diagnostic Screening Studies—A serum growth hormone is measured by radioimmunoassay obtained one hour following administration of 100 Gm. of glucose p.o. (normal growth hormone less than 4 ng/ml.)

Therapy—A wide variety of therapies directed to anterior pituitary destruction is employed to treat acromegaly. X-ray and proton beam irradiation as well as hypophysectomy by surgical and selective microsurgical technique is employed.

HYPOTHYROIDISM:

Pathophysiology—A paradoxical increase in blood pressure occurs in hypothyroid patients despite a decrease in cardiac output. This hypertensive action attributable to an increased peripheral vascular resistance. The precise mechanism is unknown.

Diagnostic Screening Studies—A serum thyroxine concentration by competitive binding analysis (Murphy-Pattee) or radioimmunoassay in combination with some measure of free thyroxine such as T3 resin.

Therapy—Replacement with a wide variety of thyroid preparations to restore clinical and laboratory euthyroid status. The blood pressure will return to normal over a period of several weeks.

HYPERCALCEMIA:

Pathophysiology—Approximately one-third of hypercalcemic patients are hypertensive. The exact mechanism by which serum calcium increases blood pressure is unknown, but is contributed to by nephrocalcinosis and renal parenchymal damage as well as direct effects of serum calcium on peripheral vascular resistance.

Diagnostic Screening Studies—Serum calcium determination. (normal 4.30 - 5.15 meq/L = 8.6 - 10.3 mg/100 ml.).

Therapy—The therapy is dependent on the specific etiology of hypercalcemia.

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Understanding the Temporomandibular Joint

A Guide to Diagnosis and Therapy

William D. Jones, III, M.D.

Abstract—The anatomy and pathophysiology of the temporomandibular joint has been reviewed. An approach to the differential diagnosis of TMJ symptoms has been outlined and a brief review given to the options for appropriate non-surgical therapy. Common surgical procedures on the TMJ are likewise discussed.

Symptoms of pain, noise or limitation of the temporomandibular joint are commonly seen by both medical and dental practitioners. This paper reviews the multiple aspects of temporomandibular joint pathology and suggests a rationale for initial evaluation and subsequent options for therapy.

Anatomic Concepts

The temporomandibular joint (TMJ) is a complex mechanism which serves as an articular point for the jaw in the activities of eating, speech, and expression. Of great importance is the activity of this joint in the more subtle experiences of tension, habit movements and unconscious emotion.

Review of a prepared skull reveals the condyle of the mandible resting loosely in the glenoid fossa of the temporal bone. The post-glenoid tubercle and the anterior articular eminence form restrictive bony blocks to normal postero-anterior excursion. Chassens¹ has proposed an interesting contour difference in the glenoid fossa of herbivores (shallow) and carnivores (deep). The majority of human TMJ's are a compromise design reflecting man's omnivorous habits. In the natural state the bulk of the condylo-temporal space is occupied by a fibrocartilaginous meniscus. This disc structurally divides the joint space into two compartments. Functionally the disc moves with the condyle. Both disc and overlying joint capsule provide receptor sites for pain and proprioception. Surrounding the joint in shroud-like fashion is the joint capsule which also serves to suspend the mandible from the skull proper.

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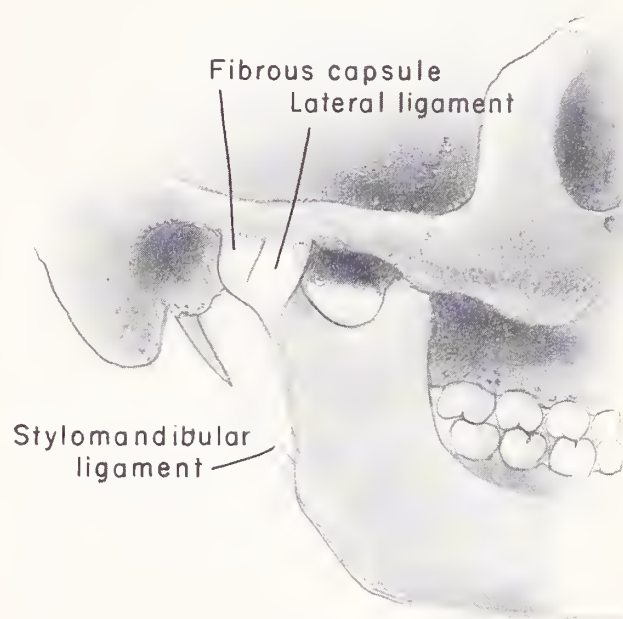


Figure 1-A

External capsular structures serving to suspend the temporomandibular joint.

In spite of its suggestive structure, the TMJ is not a true hinge. Although surrounded and controlled by a variety of powerful muscles, the joint has no weight-bearing capacity. Indeed, the true functional axis of the jaw is not in the joint itself but more distally on the ascending ramus. The disc itself has a dual pattern of movement during opening and closing. With only several millimeters of jaw opening the disc sustains a simple rotary action. However, with full oral opening a translatory component appears and the disc glides anteriorly with the condyle. The above-noted eccentric axis of rotation helps explain this action. Palpation of this dual excursion is easily appreciated by placing one's index finger in the ear canals and opening the jaw only minimally followed by full opening. In addition to opening and closing, the TMJ is also capable of side-to-side, protrusive and retrusive movements.

Basic to the understanding of TMJ pathology is an appreciation of the motor forces acting across the joint. Coordinate function is mediated by local reflex mechanisms as well as by brainstem pathways and

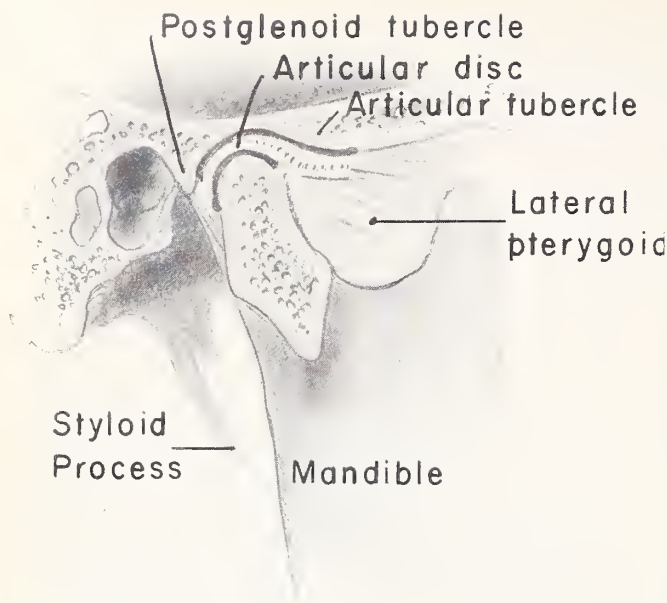


Figure 1-B

Sagittal section of the TMJ showing the interposed articular disc.

ultimately by cortical control. The motor activity of the TMJ is vested in specific muscle groups. (Figure 2). Gravity plays a significant part in the mechanism of opening. During the act of chewing energy is expended at both condyles. One side serves as the working condyle while the contralateral joint complex provides active balance.

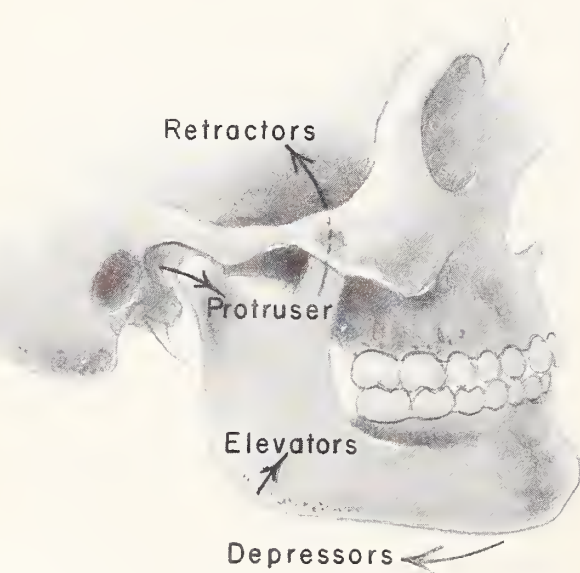


Figure 2

Functional muscular action about the TMJ. Specific motion is provided by the following groupings:

- Retraction - Posterior portions of temporalis and masseter.
- Elevation - Masseter, medial pterygoid, temporalis
- Depression - Digastricus, geniohyoid
- Protrusion - Lateral pterygoid.

A basic glossary of malocclusion and maxillo-mandibular relationships is helpful in understanding TMJ pathology. At complete rest with no active muscle function, the mandible (and condyles) assume a *physiologic rest position*. This position is the result solely of intrinsic muscular tonus and capsular support. During this resting phase there is evident an interdental zone of non-contact referred to as *freeway space*. With active clenching of the teeth (full intercuspation) the mandibulomaxillary relationship is termed *centric occlusion*. In normal states, there is no obstacle between the resting position and centric occlusion. In the restoration of a damaged occlusion, the prosthodontist utilizes a reproducible and physiologically acceptable substitute for centric occlusion which is termed *centric relation*.

A classification of abnormal occlusion was undertaken by Angle in 1849² and has more or less persisted to the present time. Angle recognized a normal state (neutroclusion) and three classes of malocclusion. This early classification was based on the relationship of the maxillary and mandibular first molars. Simply stated, the clinical classification of malocclusions is as follows:

Class I—normal occlusion in the anteroposterior plane with malposition of individual or several teeth. This group includes many commonly encountered defects such as crossbite, lateral open bite, and individually localized areas of premature contact or abnormal eruption.

CLASS II—occlusion with anterior relationship of the maxillary teeth. Type 1 and Type 2 subdivisions relate to the relative projection or overjet of the central and lateral incisors.

Class III—occlusion with an anterior relationship of the mandibular teeth. (Prognathic Occlusion).

In 1948 Ballard² introduced a more precise method of defining the relationships of the dental arches to the cranial base. By relating measured angles of upper and lower jaw to the naso-pituitary horizontal, a classification of malocclusion independent of isolated tooth alignment could be established.

The significance of the above nomenclature to the practitioner lies in the abnormal stresses placed on the temporomandibular articulation by the deviant forms of such non-accommodating teeth.

Radiographic Anatomy

The X-ray evaluation of the TMJ is an exercise in anatomy and physics. Standard postures for TMJ study include the lateral transcranial oblique and submentovertex positions. Views of the joint in both open and closed positions may be helpful. Two more sophisticated studies which require special equipment are the tomogram and the panoramic radiograph. X-

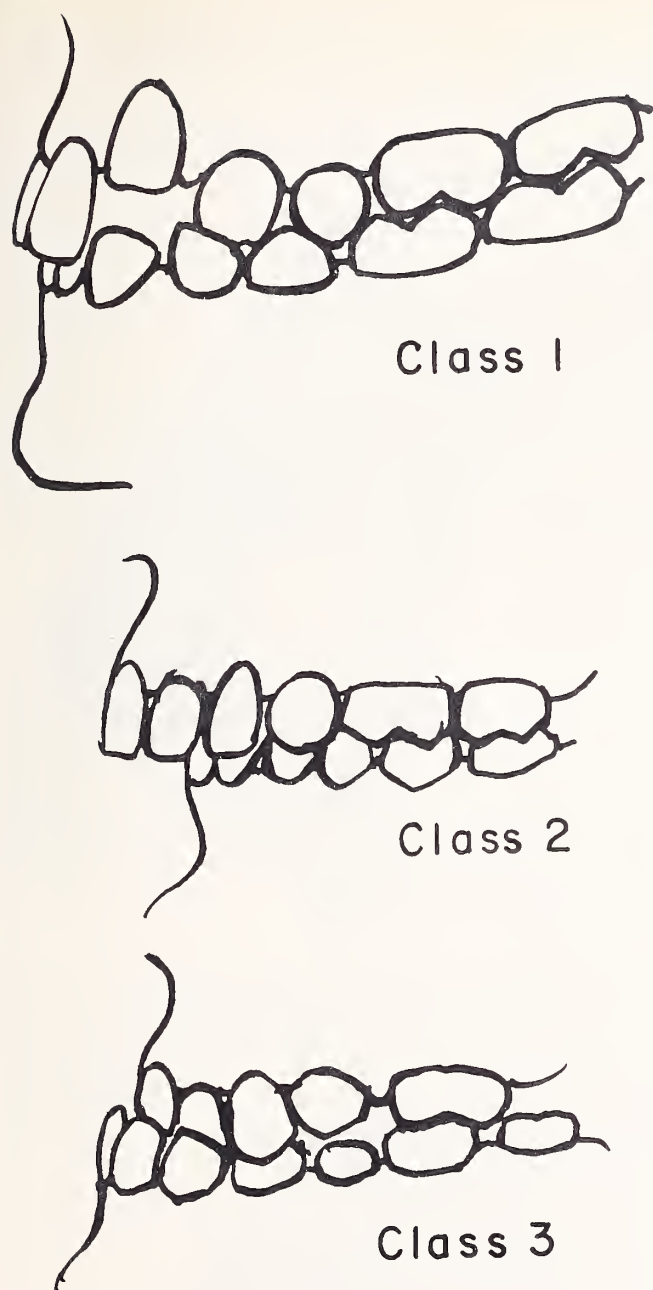


Figure 3

Angle's classification of basic types of malocclusion.

ray study of the TMJ is most helpful in the case of fracture, ankylosis or exophytic degenerative joint disease. However, as will be noted below, the majority of symptomatic temporo-mandibular joints will *not* be related to radiographically definable disease.

Pathophysiology

Nearly all patients with disease of the temporo-mandibular joint will present with one or more of the following five symptoms:

1. Pain
2. Noise
3. Hypermobility
4. Immobility
5. History of Trauma

Joint pain is the common demoninator of TMJ pathology. Typically, TMJ pain is unilateral, dull, unremitting, and aggravated by motion. Myalgic "trigger areas" may be present and the pain may radiate to the neck or shoulder.

Noise in the TMJ is generally related to the relationship between the condyle and disc and the articular eminence anteriorly. Variably, the symptomatic patient will describe a "click" or "clunk" with joint motion. True crepitation is generally seen only with degenerative joint disease. Obviously, pain may be closely related to the derangement producing the audible symptom.

Abnormal mobility may be either an excess or a deficit. The acutely dislocated jaw is the prototype of hypermobility. In this situation the condyle has jumped anteriorly to the articular eminence. Reduction requires simple distraction. The normal retrusive forces will then correct the deformity. (Figure 2). Analogous to the recurrent dislocation of the shoulder, most chronically dislocating jaws are the result of poor initial management. Any acutely dislocated jaw should receive a several week rest period by external halter or interdental wiring. The surgical correction of intractable hypermobility will be discussed below.

Ankylosis or inadequate excursion of the TMJ has multiple etiologies. The characteristic progression is one of stiffness to partial limitation (capsular factors) to ultimate bony union. Tomograms aid in the differential diagnosis of capsular vs. bony restrictions. Although infection and inflammatory states (especially rheumatoid arthritis) can progress to ankylosis, the majority of instances stem from acute or repetitive trauma. A large portion of cases have their origin within the first decade of life. So-called congenital ankylosis may well be related to unrecognized birth

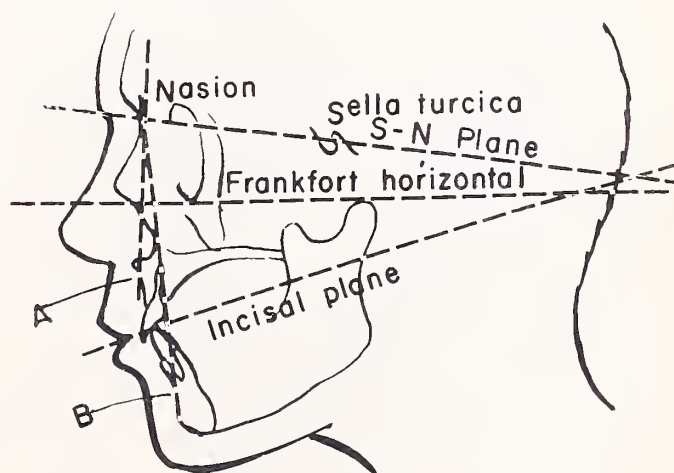


Figure 4

Fundamental planes in lateral cephalometry. The SNA and SNB angles form the basis for the Ballard Classification of malocclusion.

trauma. With progressive limitation and ultimate joint fusion the patient suffers a triad of malnutrition, speech deficits and oral sepsis. Growth deformities are evident in patients with pre-pubertal injury. A variety of corrective surgical techniques are available.

Fracture of the condyle is usually suspected from the history and the local joint pain and tenderness. A high index of suspicion is needed if only one more distal mandibular fracture line is evident—especially in direct blows to the chin. Specific X-ray techniques including the panoramic radiograph are invaluable. The danger of aseptic necrosis and ankylosis is high in condylar fractures. The injury should be evaluated by those specialists in the community commonly treating facial fractures.

Differential Diagnosis

Recognition of temporomandibular joint symptoms should allow the physician to run through a simple schema of possible etiologies. Acute trauma may be readily evident or may be more subtle e.g.—painful yawn or a prolonged dental procedure. Regional infection including sialadenitis, furuncle of the ear canal, otitis media, and mastoiditis must be ruled out. Gonococcal pyarthrosis is a remote possibility. A full intra-oral inspection is mandatory. Dental abscesses are usually quite evident and most patients will quickly localize such symptoms. Rheumatoid changes in the TMJ are always associated with symptoms elsewhere in the body. Tumors of the maxillary sinus may produce TMJ pain.

In spite of the potential etiologies of TMJ pain listed above, the most common mechanism is what the dental profession terms occlusive dys harmony. This rather euphonious condition is discussed at length by Yavelow³ and is the cause of what he describes as the “myofascial pain dysfunction syndrome.” The thesis of this condition is as follows. Through either a malocclusive *anatomic* defect or through an acquired pattern of *functional* incoordination in TMJ closures, stress is placed on the adjacent myofascial structures. The presence of the typical “trigger zones” is easily correlated. Yavelow further stresses the role of unrecognized tension as a cause of this functional state and describes a program of relearning. Recognition of abnormal tension and irregular closure is often easily accomplished by simple bimanual palpation and close observation of the arc of TMJ opening and closure. Bruxism (nocturnal tooth grinding) may be an ancillary manifestation. Questioning the spouse may be helpful in such instances. Electromyographic study is available for problem cases and formal psychiatric consultation may be indicated.

Therapy

The majority of the discrete pathophysiological states described above have obvious routes of therapy—treatment of regional infection, elimination of structural malocclusion, etc. However, the acutely painful joint secondary to transient stress and the chronically painful joint with no radiographic evidence of generative disease pose significant problems. In acute situations, local use of heat, systemic analgesics and muscle relaxants, and local infiltration with anesthetic agents all have a place in therapy. Short-term rest of the joint by interdental wiring should be considered for more protracted problems and is advised following dislocation. Intra-articular steroids have been described as useful but their applicability in other than rheumatoid disease is difficult to rationalize.

With chronic TMJ pain and associated noise very close attention to muscular incoordination is required. Obviously, the recognition of such a problem, its explanation to the patient and the necessary course of relearning require a great deal of time, empathy and persistence on the part of the physician. Given accurate diagnosis and intelligent management, the large majority of acutely and chronically painful TMJ syndromes will respond.

Surgical Aspects of TMJ Disease

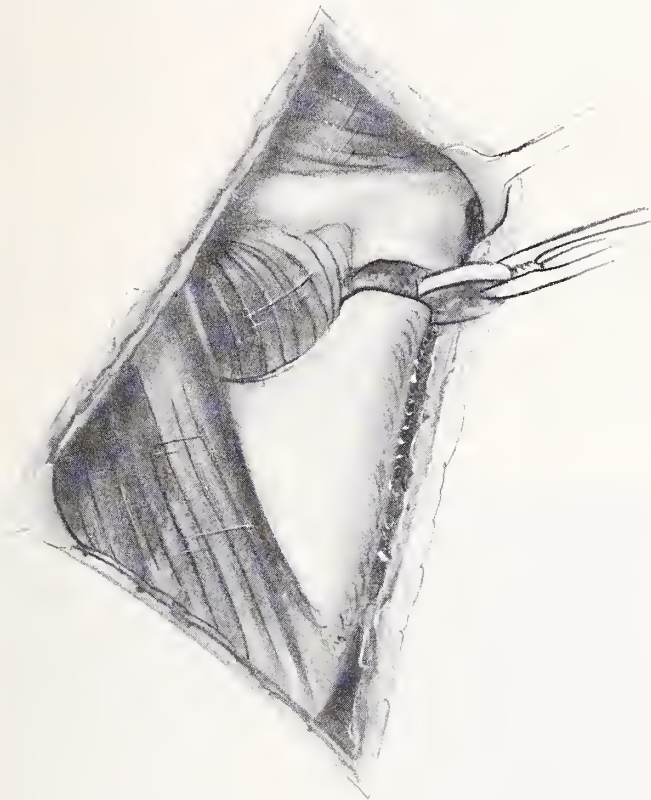
In years past, many chronically painful and noisy TMJ's were subjected to a variety of surgical procedures. While obviously of benefit in specific instances, the frequency with which surgery is presently employed is less than 10-20 years ago. Most series indicate that less than 25% of chronically disabling TMJ's will come to operation. Moreover, there are no clear-cut indications for surgery with the exception of bilateral ankylosis.

The type of surgery required is obviously dependent on the nature of the end-stage disease present. Persistent symptoms of pain and joint noise may benefit from meniscectomy with or without replacement of the disc by a silastic block or dermal graft. Radiographically visible osteophytic joint disease may require only recontouring of the condylar head without need for meniscectomy. The presence of more severe osteophytic disease or ankylosis requires either condylectomy or creation of a pseudarthrosis by interposition of an exogenous cushion (silastic, dermal graft, cartilage). A unique reconstruction of the TMJ utilizing an autologous metatarsal head as a half-joint transfer has been presented by Dingman.⁴ A variety of total joint replacements has been advocated. A multiplicity of capsuloplasties for hypermobility are described.

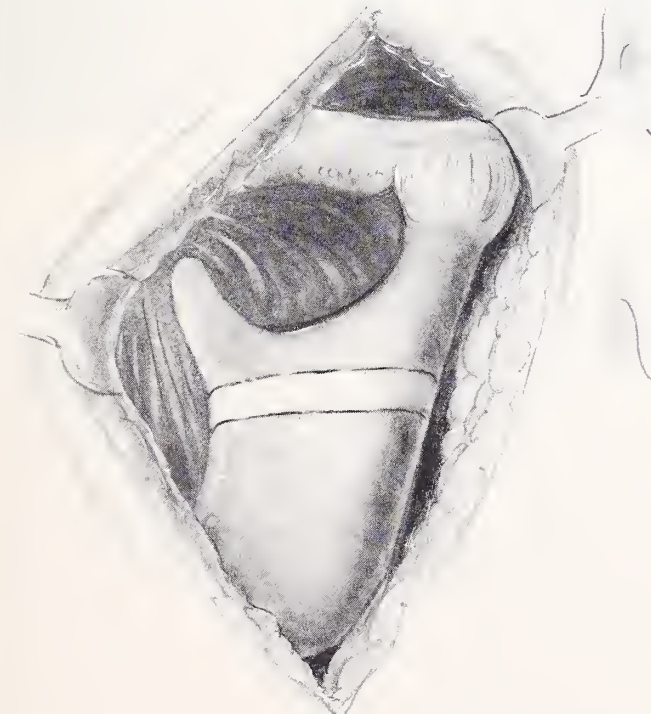
The symptomatic improvement with each of the above techniques is generally good.

Figure 5

(A-E) Examples of surgical procedures on the TMJ.



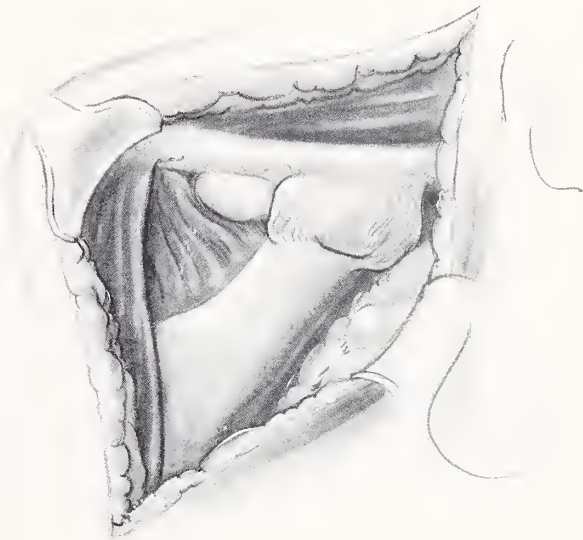
5A. Prosthetic replacement of the disc for ankylosis or severe local symptoms. The illustration depicts a limited resection and insertion of a silastic spacer.



5B. Creation of a pseudarthrosis for severe ankylosis. In far advanced disease the joint and the coronoid process are often encased in ectopic new bone. Shown in a silastic spacer well down on the ascending ramus.



5C. Dingman's procedure of a half-joint metatarsal transfer for reconstruction of the TMJ.



5D. Bone block for hypermobility. Anterior excursion of the condylar head is hereby restricted.



5E. Tethering procedure for hypermobility. Anterior excursion is likewise restricted.

One additional but significant aspect of the TMJ surgery deserves comment—that of joint reconstruction following loss of the mandible. Numerous patients exist who by virtue of trauma, surgical extirpation or infection lack mandibular bulk and TMJ function. Many of these unfortunate individuals and their physicians are unaware of the potential for cosmetic and functional rehabilitation. Certainly, consultation regarding reconstruction would be a worthwhile effort.

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Correction of Renovascular Hypertension: Sequential Autotransplantation and Nephrectomy

Gregory E. Rauscher, M.D. and Samuel L. Kountz, M.D.

Abstract—This case report presents successful management of bilateral renal artery disease (80% stenosis of the right renal artery and complete occlusion of the left renal artery) with aortic arteriosclerotic involvement and secondary renovascular hypertension. By sequential surgical correction of the salvageable stenosed kidney with revascularization by autotransplantation in a poor risk patient, clinical reevaluation, and then curative nephrectomy, intractable renovascular hypertension was corrected.

Surgical correction of renal artery stenosis, in selected cases, is the ideal form of therapy for renovascular hypertension.^{1,9} When there is associated severe aortic arteriosclerotic disease, direct repair of the renal artery may produce difficulties. We have recently encountered a patient with severe bilateral renal artery disease and arteriosclerosis of the aorta with secondary renovascular hypertension who was successfully treated by sequential autotransplantation and nephrectomy.

Case Report

A 52-year-old housewife who suffered from severe headaches and diminishing visual acuity of seven months' duration was referred to our Center on February 23, 1974, with an angiographic diagnosis of bilateral renal artery disease. The hypertensive workup, instituted by a local physician, yielded on selective renal angiogram complete occlusion of the left renal artery and 80% stenosis of the right renal artery plus arteriosclerotic disease of the aorta (Figure 1). Intravenous pyelogram indicated good right renal function with a delayed left nephrogram. On admission, the patient received the following medications: Aldomet-2 grams; Inderal-40 mg.; Lasix-40 mg.; Guanethidine-30 mg.

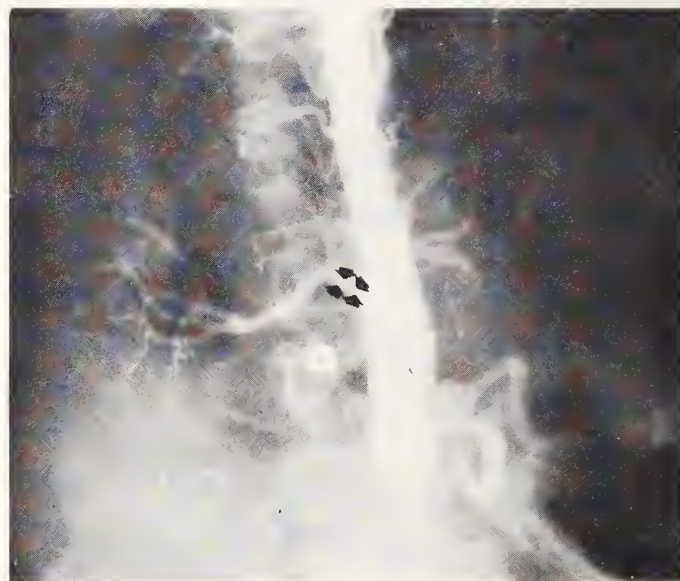


Figure 1

Selective renal angiogram. 80% stenosis of the right renal artery and complete occlusion of the left renal artery.

Physical examination revealed an obese, well-nourished, apprehensive 52-year-old female with a supine blood pressure of 210/100 in both upper extremities. Fundoscopic examination revealed grade III hypertensive changes. Cardiac examination included a slight enlargement of the left heart border with no heaves or murmurs. The abdomen was obese and soft with a prominent bruit to the right of the umbilicus. There were no masses palpable in the abdomen. The peripheral pulses were equal bilaterally and adequate. The neurologic examination was intact.

Routine laboratory tests were normal except for radiologic cardiomegaly and electrographic left ventricular hypertrophy and left atrial enlargement. Selective renal vein catheterization yielded (Table I) the following: (a) Left renal vein renin-700 nanograms/cc. and (b) right renal vein renin-500 nanograms/cc. Peripheral renin was 500 nanograms/cc. The selective renal angiogram, in addition to the renal findings, showed extensive arteriosclerosis of the abdominal aorta with no definitive stenosis. Serum creatinine was 1.6 mg/cc and bound urea nitrogen (BUN) was 26 mg/cc.

In view of the severe aortic disease and bilateral renal artery disease, it seemed desirable to perform a conservative approach and increase the blood flow to the right kidney prior to the repair

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TABLE I

	<i>Serum Creatinine (mg/cc)</i>	<i>Blood Urea Nitrogen (mg/cc)</i>	<i>Blood Pressure (mm Hg)</i>	<i>Right Renal Vein</i>	<i>Left Left Vein</i>	<i>Peripheral</i>
Preoperative	1.6	26	210/110	500	700	500
Postoperative autotransplant	1.2	20	200/110	—	—	73
Postoperative left nephrectomy	1.2	12	130/80	—	—	4
One-Year follow-up	1.2	12	130/70	—	—	—

and/or nephrectomy of the left kidney. On March 4, 1974, the patient underwent a retroperitoneal right nephrectomy by sliding the kidney down to the right iliac fossa. The autotransplant was accomplished by an end-to-end anastomosis of the right renal artery and the right internal iliac artery. The right internal iliac artery required an endarterectomy. The ureter was left intact. Biopsy of the right kidney revealed ischemic obsolescence of approximately 25% of the glomeruli plus associated tubular atrophy.

The patient had an uncomplicated postoperative recovery and her blood pressure without medications ranged between 130/70 to 180/100 in the first few days before a return to the preoperative blood pressure 200/100. Serum creatinine dropped to 1.2 mg/cc and the BUN was reduced to 20 mg/cc. Postoperative peripheral renin level was 73 nanograms/cc. As evidenced by the diminished peripheral plasma renin, there was significant renin output from the stenosed right kidney prior to its autotransplantation. However, the occluded left kidney was still producing pathologic renin levels to cause preoperative hypertensive pressure to return.

On March 25, 1974, the patient underwent a left nephrectomy which confirmed angiographic complete occlusion of the left renal artery as only capsular blood flow existed to the kidney. The postoperative course was benign and the blood pressure dropped to 130/80 without anti-hypertensive medications. The final plasma peripheral renin level was 4 nanograms/cc which resulted in her surgical cure. At one year follow-up, the patient is normotensive with normal renal function as evidenced by a creatinine of 1.2 mg/cc and a BUN of 12 mg/cc on no medications.

Comment

The successful outcome of this case demonstrated the practicality of autotransplantation in managing renovascular hypertension. On angiogram the patient demonstrated bilateral renal artery disease plus severe arteriosclerotic aortic disease. The choice of standard revascularization by aortorenal saphenous vein bypass with concomitant severe arteriosclerosis of the aorta and subsequent clamping of the aorta for control would dictate a significant vascular as well as abdominal procedure. The potential loss of blood plus the manipulation and clamping of the extensively involved arteriosclerotic aorta and its attendant complications of embolization made us choose autotransplantation. The heroic undertaking of an aortic endarterectomy or aorto-iliac bypass with any combination of renal revascularization has been reported by Foster³ with unsavory results. Other surgical approaches available could have included the following: Left nephrectomy and right renal artery

thromboendarterectomy, attempted bilateral autogenous arterial or dacron bypass grafts, or bilateral thromboendarterectomy. All these approaches require aortic manipulation in a patient of significant operative risk. An ex vivo microsurgical repair of the occluded left renal artery, although conceptually possible, was not performed due to the prolonged anesthesia and the probability of complete parenchymal damage. Subsequent pathologic section indicated 90% glomerular obsolescence. Consequently, a bilateral autotransplant would have been fruitless.

With the advent of renal homotransplantation, it is well known that only one kidney is needed for survival.^{6, 10} In cases of renovascular fibromuscular dysplasia, bench surgical repair followed by autotransplantation has been very successful.¹¹ In cases of severe arteriosclerotic aortic and bilateral renal artery disease with selective renal vein renin analysis, autotransplantation affords a safe surgical approach. The reduction of plasma renin after revascularization by autotransplantation documented that the source of high renin release was bilateral.¹² The sequential approach with right renal vascular correction, in our case, allowed an additional clinical reevaluation of the patient's renal status prior to the curative left nephrectomy.

With more surgeons becoming familiar with autotransplantation, the surgical procedure of choice in renovascular hypertensive disease with severe atherosclerosis of the aorta should be autotransplantation.² The operative technique for autotransplantation is straightforward and the dangers of ischemic damage can be minimized by cooling the kidney with heparinized saline flush and cold laparotomy towels while the vascular anastomoses are performed. Similarly, in the event of further vascular reconstruction, access to the autotransplanted kidney is technically safer and easier.

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Breast Development, Lactation, and Galactorrhea

Robert L. Goldenberg, M.D. and Ernest J. Ewaschuk, M.D.

Abstract—Recent advances in the hormonal control of breast development and lactation are presented. Special emphasis is placed on inappropriate lactation or galactorrhea. The differential diagnosis, evaluation and treatment of this problem are discussed.

Breast Development: Breast development consists of proliferation of secretory glands and ducts and fat deposition.¹ Both males and females maintain a potential for breast development and fluid secretion if given adequate hormonal stimulation. The most efficient hormonal environment requires insulin, cortisol, thyroxine, and growth hormone in addition to progesterone and estrogen. Androgenic hormones tend to suppress growth even in the presence of adequate quantities of the other hormones.² Increasing production of prolactin, estrogen and progesterone, free cortisol, insulin and placental human chorionic somatomammotropin (HCS) all contribute to the marked breast stimulation in pregnancy.

Milk Secretion: Although all the hormones necessary for milk secretion are present in pregnancy, only non-milk colostrum (composed of disquamated epithelium and transudate) is produced prior to delivery. It is believed that despite availability of proper stimuli, the high levels of estrogen and progesterone inhibit the secretory cells from synthesizing the protein, carbohydrate and lipid components of milk.³ After delivery, in the presence of adequate thyroxine,

insulin, cortisol, parathormone, adequate dietary intake of nutrients and fluids and in the face of falling levels of estrogen, progesterone, HCS and prolactin, breast engorgement and milk production begin. Suckling elicits transitory surges in prolactin release which may be important in the initiation of milk production.⁴

Milk Release: Ejection of milk does not occur as the result of a mechanically induced negative pressure produced by suckling.⁵ Rather stimuli received by the hypothalamus cause the production of oxytocin and its secretion into the blood stream by the posterior pituitary. Oxytocin causes contraction of myoepithelial cells lining the mammary ducts and milk contained in the ducts is then ejected. The stimulus for oxytocin release often comes from suckling but may be elicited by other sensory stimuli as well. The visual or auditory stimuli occurring in the preparation for nursing, for example, may cause milk ejection in a lactating woman. For continued secretory replacement of ejected milk, prolactin (often stimulated by suckling) must be available in sufficient quantities.

Control of Prolactin Secretion:^{6,7} Prolactin like the other pituitary hormones is a long chain polypeptide. The normal regulation of secretion by acidophilic cells of the anterior pituitary involves both negative and positive control by the hypothalamus. Thyroid releasing hormone (TRH) simultaneously causes the release of prolactin, while another hypothalamic peptide hormone, prolactin inhibitory factor (PIF) suppresses the formation and release of prolactin. The latter hormone (PIF) appears to assert the dominant control. Therefore stimuli such as suckling causes

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suppression of the hypothalamic production of PIF resulting in pituitary production and release of prolactin. In the absence of sensory stimuli the hypothalamus produces PIF, and therefore suppresses pituitary production of prolactin.

Cessation of Lactation:

1. If there is no suckling there will be no milk release and milk production will be suppressed via a local pressure effect. In addition the absence of suckling allows increased PIF secretion resulting in decreased prolactin production by the anterior pituitary, further suppressing milk secretion.
2. Estrogen, progesterone and testosterone all have been reported to exert a local inhibitory effect on breast milk secretion. A combination of estrogen and testosterone has been shown to be the most effective preparation available for inhibiting postpartum lactation, although a number of other hormonal medications are available as well.⁴
3. An ergot preparation, 2-brom-ergo cryptine (CB-154 Sandoz) has been shown to effectively inhibit postpartum lactation.⁸

Inappropriate Lactation—Galactorrhea

Inappropriate lactation is defined as mammary secretion of milky fluid which is non-physiological in that it may be persistent, excessive or unrelated to a recent pregnancy or postpartum state. Lactation persisting one year after cessation of a pregnancy or breast feeding is considered abnormal. The quantity of secretion from one or both breasts, intermittency, appearance, and relationship to amenorrhea do not appear important criteria in evaluating the seriousness of this disorder. Some of the causes of galactorrhea are listed below:

Causes of Galactorrhea

1. *Idiopathic, often associated with amenorrhea:* This is by far the most common type and is known by several names:
 - A. *Chiari-Frommel*—amenorrhea and galactorrhea with history of antecedent pregnancy.
 - B. *Argon-DelCastillo*—amenorrhea and galactorrhea in the absence of previous pregnancy.

The difficulty with these eponyms is that they are simply descriptive. They do not define the cause of the amenorrhea and galactorrhea, nor are they helpful in isolating those patients who will be discovered to have a neoplasm leading to the amenorrhea and galactorrhea. (It should be noted that the majority of patients with amenorrhea and galactorrhea will not have a neoplasm.) Most often this syndrome is caused by a hypothalamic malfunction of unknown etiology resulting in both de-

creased production of gonadotropin releasing factors (amenorrhea) and PIF (galactorrhea).

2. *Pituitary Adenoma:* (When associated with amenorrhea and galactorrhea, it is also known as *Forbes-Albright* syndrome.) These tumors resulting in galactorrhea are often chromophilic adenomas. Recent reports show that prolactin production is increased (usually above 100 ug/ml) in 25 percent of all women with pituitary adenomas.⁹ Other women with pituitary adenomas with apparently normal prolactin levels may have galactorrhea.
3. *Hypothalamic Lesions or Pituitary Stalk Secretion:* commonly result in decreased production and/or release of PIF, excess prolactin production and milk secretion.
4. *Drugs:* especially the phenothiazine derivatives suppress hypothalamic PIF resulting in prolactin release.¹⁰ Reserpine, methyl dopa, and amphetamines also have been reported to induce galactorrhea.
5. *Exogenous Estrogen:*¹¹ (i.e. oral contraceptives) can lead to milk secretion via the hypothalamic suppression of PIF. In addition discontinuance of this pseudo-pregnancy state may result in the equivalent of postpartum lactation.
6. *Hypothyroidism:* Thyroid releasing hormone (TRH) causes pituitary secretion of prolactin.¹² Therefore when the hypothyroidism is caused by *primary* thyroid failure and the TRH is elevated prolactin secretion may be stimulated resulting in galactorrhea. There have been several reports, however, of hypothyroidism with galactorrhea and normal serum prolactin levels.
7. *Hyperthyroidism, Cushing's Disease and acromegaly* have all been reported in association with galactorrhea. The etiology of the galactorrhea is unknown in these illnesses.
8. *Prolonged Intensive Suckling* or any chest stimulation (i.e. thorectomy scars,¹³ cervical spine lesions, herpes zoster) induce prolactin release by activating the afferent sensory neural pathway resulting in PIF suppression.
9. *Miscellaneous:* Histiocytosis, tuberculosis, sarcoid, renal failure, heroin addiction,¹⁴ emotional stress, ectopic prolactin secreting tumors, pineal gland tumors, encephalitis, tabes dorsalis, and syringomyelia all have been reported in conjunction with galactorrhea.

Evaluation of a Patient with Galactorrhea

Who to Evaluate: One of the major problems in the evaluation of people who present with galactorrhea is defining that population who have pituitary or hypo-

thalamic neoplasms. Since small quantities and/or intermittent discharge, unilateral secretion, and persistent menses are all compatible with a pituitary or hypothalamic neoplasm, galactorrhea of any description should be evaluated. Furthermore if normal lactation persists greater than one year after the cessation of breast feeding, evaluation should take place.

If galactorrhea develops during the use of oral contraceptives or the other medications known to induce galactorrhea, the drug should probably be discontinued if proper management of the patient permits. If galactorrhea persists for 6 months an evaluation should be initiated. Alternately, the patient may be allowed to continue using the medication and an evaluation for a pituitary and hypothalamic neoplasm be performed.

Evaluation: The spontaneous onset of galactorrhea or known galactorrhea persisting beyond the expected time of cessation necessitates an evaluation for both pituitary and hypothalamic neoplasms. Skull X-ray and visual field examination have been the major focus of the evaluation for many years. Skull X-rays are important in that they allow visualization of the sella turcica and suprasellar area. The presence of a tumor can often be determined by abnormal calcification, enlargement of the sella turcica or erosion of the sella floor or clinoid processes.

Since the optic nerve passes above and lateral to the sella turcica, a tumor will occasionally compress the optic nerve resulting in a bitemporal hemianopsia as determined by visual fields. Since hypothalamic and pituitary neoplasms are often slow growing and changes in skull X-ray and visual fields occur late in the course of the growth, these studies should be performed *yearly* as long as the galactorrhea persists.

Endocrine Manipulations in the Evaluation of Galactorrhea

In the presence of a pituitary tumor, pituitary hormone production usually is obliterated in the following sequence: growth hormone, luteinizing hormone (LH) and follicle stimulating hormone (FSH), adrenocorticotrophic hormone (ACTH) and thyroid stimulating hormone (TSH). Nevertheless the evaluation of pituitary hormone production is not always helpful in determining the presence of a hypothalamic or pituitary neoplasm. Normal values of any of the hormones do not rule out a tumor or abnormally low and occasionally high values are often found when no tumors are present. Therefore in the presence of normal visual fields and skull X-rays many endocrinologists would not choose to evaluate the galactorrhea further, other than to repeat these studies each year. Nevertheless a number of endocrine tests are used and some are occasionally helpful. The circumstances under which they should be used and our feelings

about their potential value are discussed. It should be noted again that the comments refer to women who have galactorrhea.

1. *Plasma LH and FSH:* Normal random values are in the range of 5-25 mIU/ml for both LH and FSH.

In the presence of normal menstrual cycles these values will be in the normal range. Measurement of plasma LH and FSH will therefore be of no value in evaluating a woman with menses and galactorrhea for a pituitary tumor. In the presence of amenorrhea and galactorrhea, LH and FSH measurements usually are at the lower limits of normal whether a tumor is present or not. Therefore low values are not helpful in the diagnosis of a pituitary tumor and we therefore feel that this test is *not* usually of value in the evaluation of galactorrhea.

2. *Growth Hormone:* Values obtained after exercise, insulin or arginine greater than 10 mcg/ml are considered to be the normal range and suggest normal pituitary function.⁷ Normal values, however, do not rule out the presence of a small pituitary adenoma. Nevertheless, we feel that serum growth hormone values can be of assistance in the management of galactorrhea in that in the face of repeated low values we would pursue further investigations.

3. *Serum Prolactin:* This test is still very new and primarily a research tool. Nevertheless, certain statements can be made.^{9, 15}

- (a) normal values are $>5 < 35$ ng/ml
- (b) high values (> 100 ng/ml) are frequently but not always associated with pituitary adenomas.
- (c) galactorrhea can be found with normal values of prolactin and occasionally is not present even when the values are very high.
- (d) physiologic prolactin production and release can be surpassed by L-dopa.

It is our feeling that serum prolactin values may be helpful in the management of galactorrhea and when feasible should be obtained. Cases in which there are repeated high values that do *not* suppress require further evaluation.

4. *TSH and ACTH* production is not affected early in the course of a pituitary tumor and is rarely lost before radiologic or visual symptoms appear. Nevertheless because of the association of galactorrhea with abnormal thyroid states we include a serum thyroxine as part of our routine evaluation. Routine testing of the adrenal pituitary axis in the absence of clinical signs of diminished adrenal function has not been valuable in their evaluation of galactorrhea. However, once other evidence of pituitary hormone loss, visual field or skull X-ray ab-

normality has been demonstrated, evaluation of the adrenal pituitary axis should be performed.

In the evaluation of galactorrhea, the discovery of abnormalities in the skull X-ray or visual field exams and/or repeatedly high, non-suppressible prolactin levels or repeatedly low growth hormone levels warrants neurosurgical consultation. Prior to surgical or irradiation treatment, further evaluation may include laminograms of the sella tursica, brain scan, carotid arteriogram and pneumoencephalogram. Prior to any stressful situation in these patients normal thyroid and adrenal function should be demonstrated.

Treatment of Galactorrhea

Galactorrhea in itself is a symptom, not a disease, and in the absence of a pituitary or hypothalamic neoplasm, has no known morbidity. Treatment, therefore, is directed toward that of the underlying disease whenever possible. In cases of idiopathic galactorrhea no treatment is necessary unless the amount of flow is disturbing to the patient.

Medications which have been helpful in suppressing prolactin secretion and galactorrhea are L Dopa¹⁷ and ergocryptine. L Dopa apparently is decarboxylated by the hypothalamus to form dopamine which activates PIF release and suppresses prolactin secretion. Ergocryptine, an experimental drug which will probably be approved for use in the next year, seems to act directly on the anterior pituitary tissue to rapidly suppress prolactin release and galactorrhea.¹⁸

In situations where amenorrhea and galactorrhea present together, suppression of galactorrhea with one of these medications often restores ovulation and normal menses. Alternatively, stimulation of ovulation with clomiphene often suppresses galactorrhea.

Summary

Recent advances in knowledge concerning the hormonal control of breast secretion under normal and pathological situations has been presented. It should be noted that the radioimmunoassay of serum prolactin is just a few years old and that advances in this field are occurring rapidly. We suspect that within a

short time evaluation and treatment of galactorrhea will be an easier and more comprehensible task than it is at present.

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Balanced Anesthesia Revisiting

David M. Little, Jr., M.D.

Abstract—Balanced Anesthesia evolved first as a technique of regional anesthesia supplemented by light general anesthesia; it then developed through what came to be known as Combined Anesthesia (hypnosis, analgesia, and muscle relaxation); and finally ended as Modern Balanced Anesthesia (hypnosis, analgesia, muscle relaxation, and the obtundation of noxious reflex activity).

Balanced Anesthesia waned for a variety of reasons, chief among which were the complications from muscle relaxants used in large doses; the occasional occurrence of consciousness during anesthesia; and, particularly, the advent of halothane and the renewed interest in fully-potent anesthetic agents which this aroused.

Its resurgence has been precipitated by the great growth in cardiovascular surgery; the change in attitude toward the use of intravenous morphine and other narcotic drugs during anesthesia; and the influence of medico-legal actions and governmental restrictions resulting from complications which have occurred following the use of some of the newer fully-potent drugs.

The actual introduction of anesthesia was, in and of itself, a fascinating story, a great historical event; but more important to the subsequent development of the Art and Science of Anesthesiology was the fact that anesthesia was conducted with a single anesthetic drug—nitrous oxide, ether, chloroform, or chloric ether. These drugs were used as the sole anesthetic agent for most of the first hundred years of anesthesia with the exception of the introduction of the traditional GOE, "gas-oxygen-ether" combination of nitrous oxide and ether, by Clover in 1873. GOE was perhaps the first significant prophesy of Balanced Anesthesia; but in actual fact it really was more a combination of convenience than the birth of a philosophy of anesthetic administration. By and large, the methodology was that of a single anesthetic agent for the production of anesthesia, and it was a rather simple affair. A piece of rag and a bottle of ether or chloroform sufficed to render the patient unconscious; and when this amenity had been observed, operation

could proceed forthwith. When both the rag and the patient were soaked with ether and were limp, the ultimate in anesthesia had been achieved—the ultimate, at least, for the nineteenth century.

During the past fifty years, however, it has come to be realized that this was not without considerable cost to the patient. Whatever the admirable qualities of ether anesthesia administered in this way may have been, the results upon the physiological status quo of the organism were not among them. The metabolic derangements that can be produced by a single piece of rag and a bottle of ether are little short of appalling: respiratory depression, with gasping respirations; respiratory acidosis from inadequate alveolar ventilation; rather marked tachycardia from vagal blockade; substantial fall of blood pressure as a result of the depression of the vasomotor center and peripheral vasodilatation; and direct myocardial depression.

The realization that volatilizing a bit of ether upon a piece of cloth produced important and absolutely fundamental disorders of the homeostasis of the body has been responsible for the dominant characteristic of anesthetic progress—development of the practice of clinical pharmacology in the administration of anesthesia. Ether has been chosen as an example because of its historic importance; but unpleasant physiological effects apply equally as well to chloroform, cyclopropane, or any other drug employed for full and total anesthesia.

The trend away from reliance upon a single drug employed for full and total anesthesia was possible only when the anesthesiologist's armamentarium came to include drugs which allowed the true practice of clinical pharmacology during anesthetic administration; and this is probably as good a definition of Balanced Anesthesia as any: the practice of clinical pharmacology during anesthetic administration. One of its early origins was the theory of anoci-association, (Figure 1) propounded by the late George Crile, Sr., in 1911.¹ Reasoning along physiological lines, Crile argued that not only must the brain be protected against destructive psychic strain by the use of general anesthesia, but that local anesthesia must also be employed to exclude noxious impulses arising from the site of surgical interventions. He pointed out that although such double protection could be achieved by very deep general anesthesia produced with a single drug such as chloroform, or ether, the cost to the patient in terms of deranged metabolism

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ANOCI-ASSOCIATION

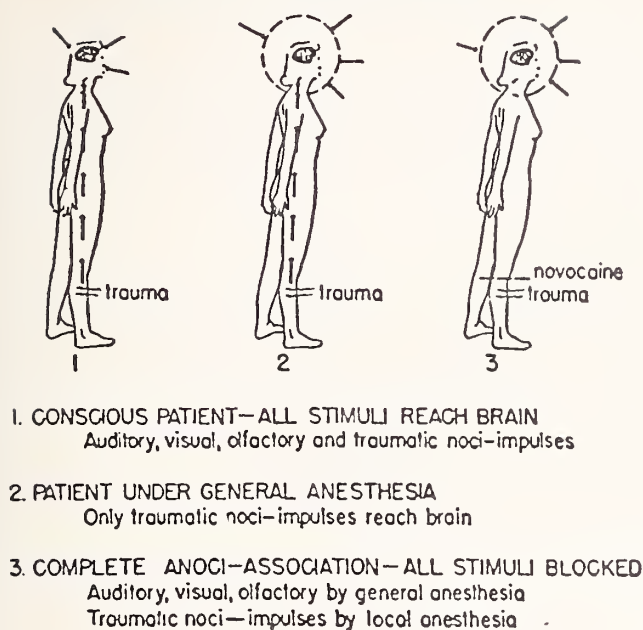


Figure 1

Pictorial description of Crile's Theory of Anoci-Association.

would amount to what we would say, in all frankness today, was relative overdosage.

Lundy adopted a similar line of reasoning in 1926 when he coined the term "Balanced Anesthesia" (Figure 2) which he employed to designate the use of a combination of anesthetic drugs and methods so balanced that the burden of the relief of pain would be borne in part by the preliminary medication, in part by regional anesthesia, and in part by general anesthesia.²

BALANCED ANESTHESIA LUNDY'S VERSION

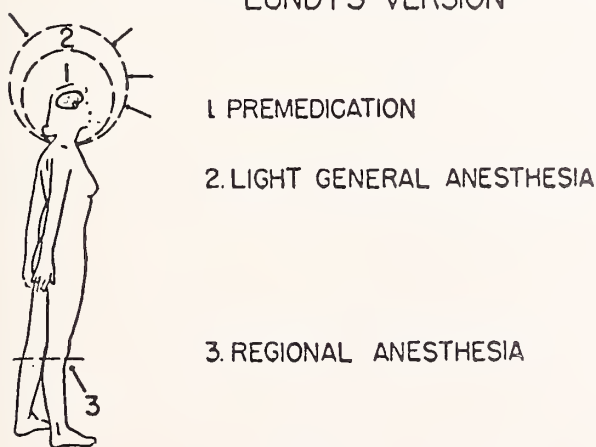


Figure 2

Pictorial description of Lundy's Balanced Anesthesia.

The introduction of cyclopropane in 1930,³ Pentothal in 1934,⁴ and finally curare in 1942,⁵ led to the development of "Combined Anesthesia," in which minimal amounts of an hypnotic (Pentothal), an

analgesic (nitrous oxide, ethylene, or light cyclopropane), and a muscle relaxant (curare or one of its analogues) were used to produce adequate conditions for surgery without recourse to deep general anesthesia and its attendant physiological disturbances. (Figure 3).

COMBINED ANESTHESIA

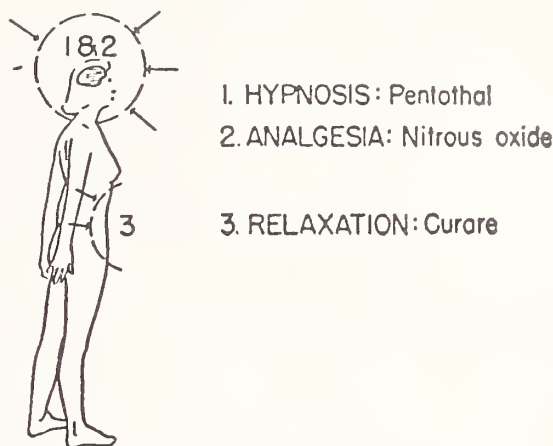


Figure 3

Pictorial description of Combined Anesthesia.

In other words, the modern use of the term Balanced Anesthesia came to imply the production of anesthesia by the use of several different drugs, often administered by several different routes, which might then be detoxified and excreted in several different ways. The logic claimed for such combinations of drugs and techniques was the fact that all anesthetic drugs are potentially toxic; if given in excessive dose, they are quite capable of lethal action; but even if administered skillfully, yet in sufficient dosage to produce true surgical anesthesia, such drugs may precipitate unwarranted alterations in body metabolism. It was thought that by combining several drugs, each being employed in minimal amount, the desired state of anesthesia might be produced with the least possible disturbance of physiological function, and the smallest possible burden upon each of the different mechanisms of excretion or detoxification.

Modern Balanced Anesthesia thus came into being with the recognition that anesthesia was not a single entity, but a state requiring the obtundation, or at least modification, of several normal functions or perceptions of the body.

Galley suggested that the concept of the anesthetic state as being composed of a number of different facets can be made understandable through a series of schematic charts.⁶ If the necessities of anesthesia are considered to be contained in a diagrammatic square, all the functions of anesthesia during open-drop ether administration must be supplied by the single agent. Thus, it will be necessary to employ sufficient ether to

produce, at one and the same time, an unconscious patient who is free of pain, whose muscles are sufficiently relaxed to permit the surgeon to conduct the operation, and whose reflex activity is reduced to the extent that the stresses of surgical endeavor cannot cause the patient bodily harm. (Figure 4).

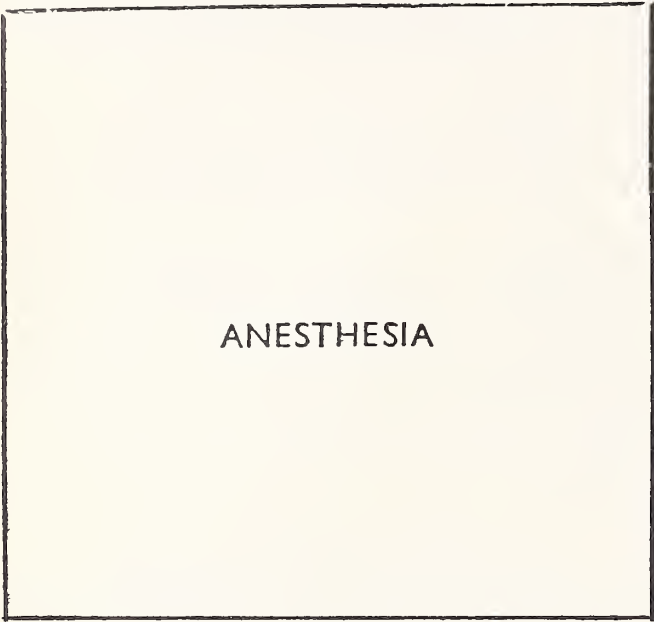


Figure 4

Pictorial description of the anesthetic state in which all the necessities of anesthesia are supplied by the administration of a single agent.

Phrased in a different fashion, it will be necessary to employ sufficient ether to produce hypnosis, analgesia, relaxation of muscles, and the obtundation of reflex activity. (Figure 5).

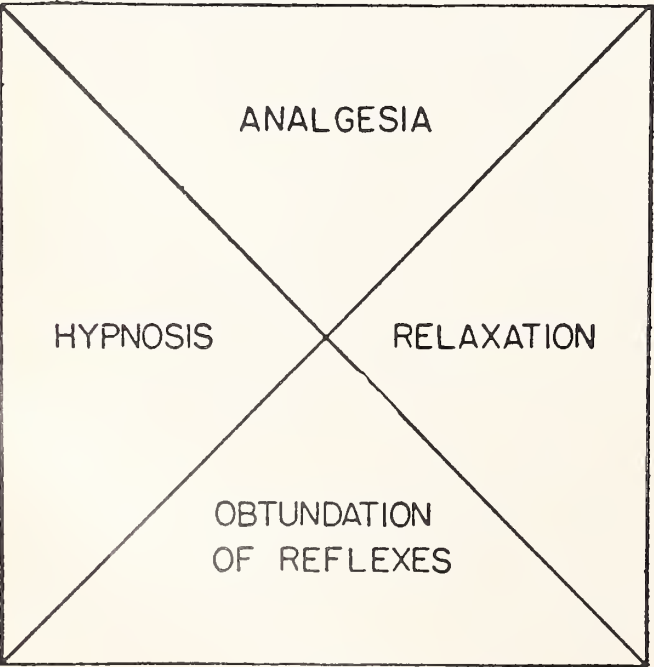


Figure 5

Pictorial description of the anesthetic state divided into its essential quadrants: hypnosis, analgesia, relaxation of muscles, and the obtundation of reflex activity.

Hypnosis, from the anesthetic point of view, was considered to be composed of, first, sedation; and then, unconsciousness. It could be produced by any general anesthetic agent, in minimal dosage, as well as by untold numbers of other compounds found both within and without the pharmacopeia. (Figure 6).

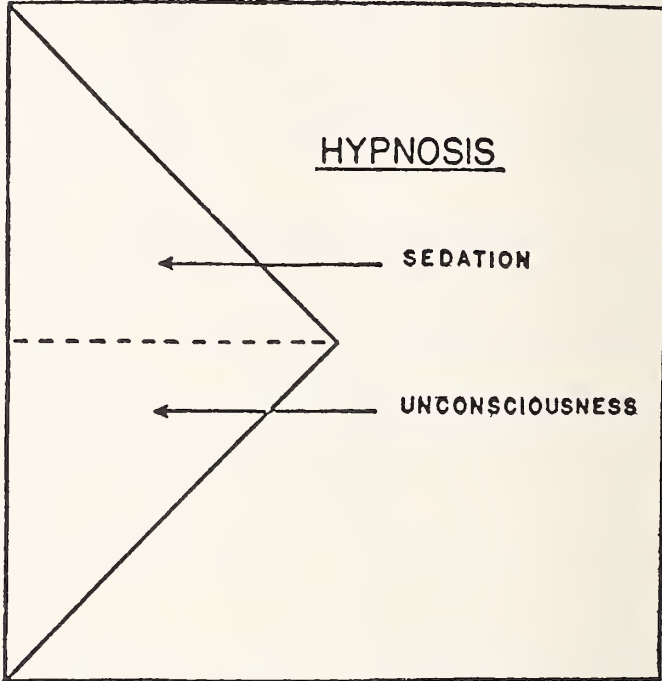


Figure 6

Pictorial description of hypnosis in anesthesia, which is composed of, first, sedation, and then, unconsciousness.

Analgesia was considered to include both the perception of touch and the perception of pain. The surgical patient rendered unconscious, or hypnotic, by the use of premedicant drugs and the injection of a short-acting thiobarbiturate at the time of the induction of anesthesia, could be made analgetic for the more superficial surgical adventures merely by the inhalation of nitrous oxide. More serious surgery required more intense analgesia, either by the inhalation of low concentrations of the more potent volatile or gaseous agents, or by the administration of an intravenous analgetic such as Demerol, Nisentil, or Dromoran. (Figure 7).

Anesthesia conducted by the administration of hypnotics and analgetics was quite sufficient for procedures encountered in the practice of, say, plastic surgery, but proved most inadequate where muscular relaxation was an essential requirement for the operative intervention. The introduction of muscular relaxation into the anesthetic equation required the administration of a neuromuscular blocking drug, or the use of conduction anesthesia to block the spinal nerves. Small doses of an agent which blocked the myoneural junction, such as curare or succinylcholine, would produce sufficient relaxation to permit manipulation of extremities in instances of fracture;

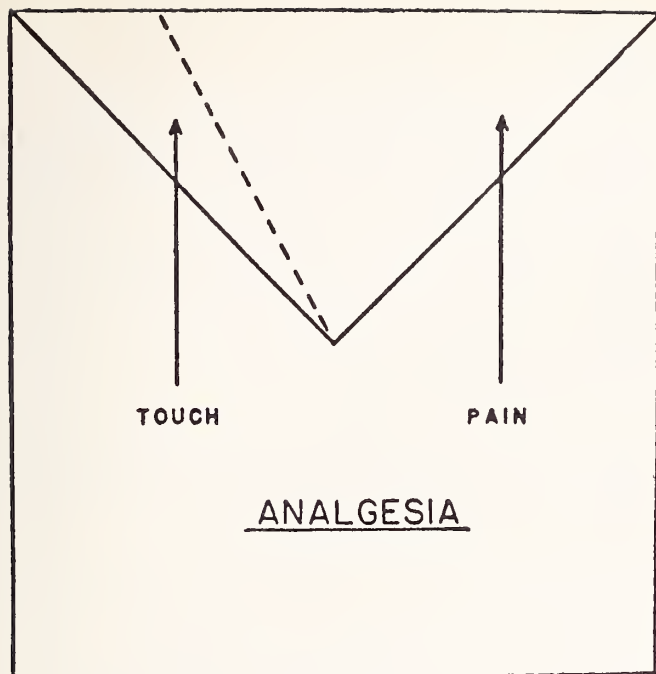


Figure 7

Pictorial description of analgesia, which includes obtundation of both the perception of touch and the perception of pain.

somewhat larger doses would be necessary to obtain sufficient relaxation for endoscopic work through the mouth, or the passage of an endotracheal tube; and the largest doses would be necessary to relax abdominal muscles sufficiently to permit intra-abdominal exploration and manipulation. (Figure 8).

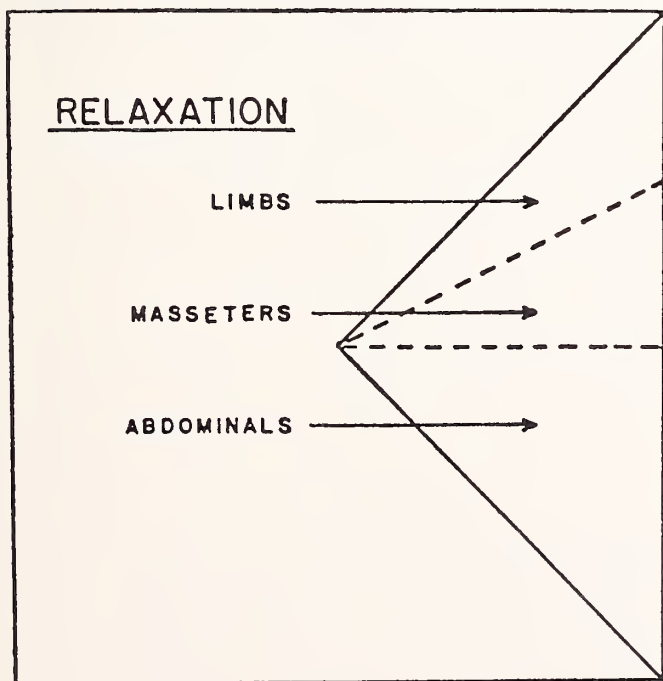


Figure 8

Pictorial description of muscular relaxation during anesthesia, which includes components referable to the limbs, the masseters and the abdominal muscles.

The final requirement of the anesthetic state, the obtundation of reflex activity, recognized that the

latter might be somatic, sympathetic, or parasympathetic. From the practical point of view of clinical anesthesia, it was often difficult to distinguish between the three types of reflex activity. Nor were the methods of blocking such noxious reflex impulses as precisely defined as the usages of the hypnotics, the analgetics, and the muscle relaxant agents: Demerol was available and was considered to have blocking properties to an extent; and, of course, Atropine was used; and there was also the hypothesis—perhaps more hopeful than in fact—that the analgetic drugs employed, and the other general anesthetic agents which were used, obtunded many such reflexes. (Figure 9).

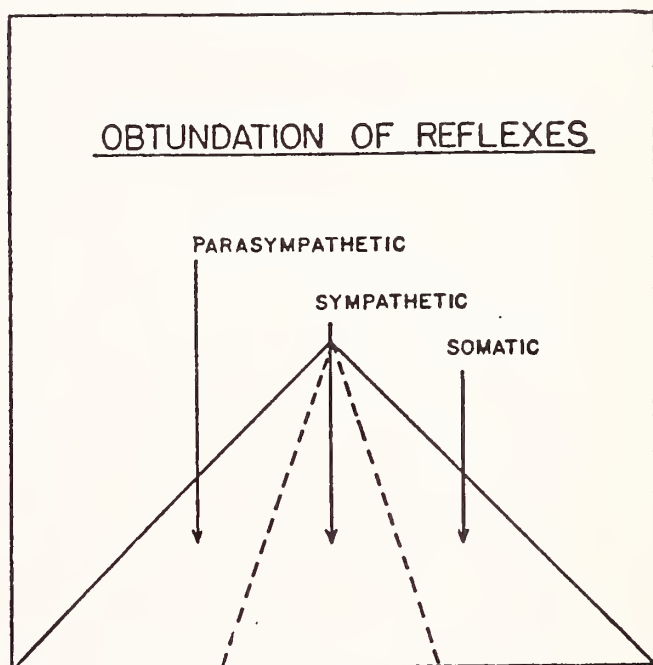


Figure 9

Pictorial description of the obtundation of reflex activity during anesthesia, which includes reflex of somatic, sympathetic, or parasympathetic origin.

Modern Balanced Anesthesia waxed in the early 1950's, and then waned in the late '50's⁷ for a variety of reasons. First, the muscle relaxants had their own inherent capacity for complications. Succinylcholine, for instance, was not the panacea that it had originally been thought to be: it could lead to unfortunate postoperative complications if there was a low pseudo-cholinesterase; if there was an atypical pseudo-cholinesterase; if succinylmonocholine accumulated in the blood stream; or if a phase-two block developed during the use of a prolonged infusion technique. Second, the drugs available to block noxious reflex activity were comparatively crude in that ability; did not always accomplish the job; and, in fact, on occasion permitted the development of truly dangerous reflex activity. Third, although there was a floor under the anesthesia (in the

sense that the patient was seldom, if ever, taken to too deep a level), there was no ceiling, and the patient could become too light: that is, paralyzed, but conscious and aware of pain. But fourth—and by far the most important factor in the wane of Modern Balanced Anesthesia—was the introduction of halothane.

Halothane had—and indeed still has—a tremendous amount going for it as a potent, non-explosive, volatile inhalation anesthetic drug. It provides a smooth, rapid, and pleasant induction, appreciated alike by the patient, the anesthesiologist and the surgeon. It is comparatively non-irritating to the trachea and the respiratory tree, permitting early intubation, and producing minimal secretions in comparison with other inhalational agents. Although it is both a respiratory and a cardiovascular depressant, anesthesia can be maintained for hours without either of these effects becoming apparent if proper attention is paid to ventilatory assistance and the regulation of the inspired concentration. The fact that it is not flammable, or explosive, of course, permits the use of cautery and other electrical equipment throughout the operation. It provides a very smooth and rapid emergence, and causes little nausea or vomiting. And—and this is a point of immense significance in the development of its popularity—it is one of the easiest anesthetic drugs to administer known to man.

In fact, once the nuances of the administration of halothane became understood, the drug's popularity knew almost no bounds: its acceptance was so great that it was undoubtedly one of the most widely employed anesthetics in the world, and at one point it was involved in almost 80% of the general anesthetics in this country each year. Halothane simply overwhelmed Modern Balanced Anesthesia. In a sense, of course, halothane was often used almost as one of the ingredients of Balanced Anesthesia, since a short-acting hypnotic was usually employed for induction, the analgetic nitrous oxide was the vehicle gas, and a myoneural-blocking drug provided muscle relaxation. But the important point, insofar as the development of Balanced Anesthesia was concerned, was that halothane turned attention back to the single, potent anesthetic drugs. Its commercial success, for instance, reinforced the efforts of a number of pharmaceutical firms to develop potent general anesthetics; and this focused the research efforts of a large number of teaching centers on the clinical investigation of these compounds. They included such inhalation agents as Fluroxene, Methoxyflurane, Halopropane, Teflurane, Ethrane, and Forane, as well as such intravenous agents as Innovar and Ketamine to produce neuroleptanalgesia and dissociative anesthesia.

Now, rather suddenly, Balanced Anesthesia is revisiting.

It is revisiting particularly in a form based in large part on the use of intravenous narcotics during the anesthetic administration; and this reblossoming of Balanced Anesthesia can unquestionably be traced to three major factors: the fantastic growth of cardiovascular surgery, the recent studies which have been made of the pharmacology of narcotics, and an increasing recognition of the short-comings of many of the other forms of anesthesia.

The anesthetic regimens which were originally employed for major cardiac and vascular surgery in the gravely-ill patient did not always yield satisfactory results. Prolonged periods of general anesthesia are required for these operations, of course, and these frequently resulted in deleterious alterations of cardiovascular hemodynamics in poor-risk patients with severe cardiopulmonary disease. Many of these anesthetic regimens in fact provided more actual anesthesia than was necessary—and therefore more depression of cardiovascular hemodynamics than was desirable—whereas the actual requirements are simply for sedation, analgesia, and amnesia.

Morphine, of course, has been used for literally decades in the treatment of patients with heart disease, heart failure, and pulmonary edema; and it is one of the best pain-relieving and sedative drugs in clinical use. However, the earlier pharmacological studies seemed to suggest that it was not suitable—indeed, it was even dangerous—for use during anesthesia.

Hanzlic, in 1921, was the first to demonstrate direct depression of the isolated heart by morphine,⁸ a fact which was subsequently confirmed by Gruber in 1929,⁹ and—using the isolated rat trabeculae carnae muscle preparation—by Goldberg and Padgett in 1969.¹⁰

However, all of these preparations were nourished by saline solutions; and in contrast to these findings, Flacke could demonstrate no depressant effect from doses as high as 30 mgm./kgm. in the blood-perfused dog or cat heart-lung preparation.¹¹ Furthermore, myocardial depression has not been convincingly demonstrated in the intact experimental animal: Schmidt and Livingstone, using intact dogs, found no cardiac depression with doses up to 100 mgm./kgm.¹²; while Vasco and his associates, using the dog right-heart bypass preparation, actually demonstrated a positive inotropic effect from morphine.¹³ The effect of morphine in the intact human being depends upon a variety of factors, including posture, the blood volume, the condition of the heart, and the state of the sympathetic nervous system.

When the drug is administered intravenously to supine, normal man, only minor and transient hemodynamic changes are observed; and in the patient with cardiac disease, (but not in congestive failure) only a slight decrease in cardiac output is noted. However, even in the normal subject, tilting after a therapeutic dose of morphine will produce severe orthostatic hypotension, presumably due to venous pooling in the dependent portions. Administration of morphine to hypovolemic individuals, even though they are supine, may also cause severe hypotension.

Lowenstein and his colleagues administered morphine intravenously in a dose of 1 mgm./kgm. to both subjects with aortic valve disease severe enough to require open-heart surgery, and to controls without major cardiac or lung disease. The cardiacs had higher control pulse rates and lower control stroke indices than the normal subjects; and, in contrast to the latter, developed significant increases in cardiac index, stroke volume, central venous pressure, and pulmonary artery pressure, and a significant decrease in systemic vascular resistance.¹⁴ These findings were in line with the experimental studies in animals, noted above, which have demonstrated that morphine causes relaxation of the peripheral vascular bed but has no direct cardiac effects, and which therefore suggest that large doses of morphine may be used with safety in patients with minimal circulatory reserve.

These findings, plus the observation that doses of morphine sufficient to suppress respiration during treatment of patients requiring mechanical ventilation for respiratory failure usually did not have discernable hemodynamic effects despite the large doses employed, led to the use of morphine as an anesthetic agent in patients with minimal circulatory reserve undergoing major surgery. Lowenstein and his colleagues administered doses of intravenous morphine ranging from 1/2 to 3 mgm./kgm. to patients undergoing major cardiac and vascular surgery, and morphine seemed to stand in striking contrast to other anesthetic agents, which can have a considerable cardiac depressant effect.

There are, however, other compelling reasons for the recent revisitation of Balanced Anesthesia which have nothing to do with the admirable pharmacological properties of morphine.

Item. A 39-year-old housewife, who had suffered repeated attacks of gallbladder disease, underwent cholecystectomy during halothane-succinylcholine anesthesia. Operation was uneventful, and the patient did well postoperatively for five days; but on the sixth day she developed an abrupt spiking temperature up to 104°F. and leucocytosis, neither of which could be explained despite extensive investigations. She rapid-

ly became lethargic, then hypotensive; and finally lapsed into coma and died on the eleventh day. Autopsy revealed severe central, midzonal, and peripheral necrosis of the liver.

There is no proof that this represented halothane hepatitis, or even that halothane had the slightest role to play—there are, after all, a dozen other important factors which can contribute to post-operative liver dysfunction and/or damage, and anesthesia is merely one of them.¹⁵ There are, after all, only two cases of halothane hepatitis in the literature proven beyond doubt by challenge inhalations.¹⁶ It is certain that many of the reported cases are not halothane hepatitis and have nothing to do with the anesthetic drug. The mechanism of the rare instances of halothane hepatitis remains in the realm of conjecture: an immunologic hypersensitivity is popular as an explanation at present, due either to the drug itself or one of its metabolites.

Item. A 55-year-old male school teacher with intermittent rectal bleeding over a period of six years finally sought medical assistance, and sigmoid polyps were demonstrated by both sigmoidoscopy and barium enema. These were removed, along with an unexpected Meckel's diverticulum, at laparotomy performed under methoxyflurane anesthesia as a primary agent. Operation was uneventful, but a urine volume of over 4 liters was noted on each of the first two postoperative days. Serum sodium was 155 mEq., potassium 4.0 mEq., chloride 113 mEq., bicarbonate 23 mEq. per liter; BUN 12 mgm. per 100 ml., serum osmolality 307 milliosmols. Urine concentrations were: osmolality 344 milliosmols, sodium 42 mEq., potassium 29 mEq. per liter, and urea nitrogen 400 mgm. per 100 ml.

There had been no history suggestive of renal disease, and the results of a pre-operative urinalysis had been normal, including a specific gravity of 1.023. The patient was treated vigorously with intravenous fluids until he achieved an adequately high oral fluid intake. Urine output remained higher than usual through the 10th postoperative day. During a challenge test after 12 hours of fluid deprivation, he was able to concentrate only to 608 milliosmols, but rose from 147 to 382 milliosmols in response to Petressin—which was interpreted as indicating definite impairment of renal function. Subsequent convalescence was satisfactory.

The validity of the scattered reports to the effect that methoxyflurane is a nephrotoxin and capable of producing renal damage has been questioned, but there is now a growing body of evidence that this is true. Mazze and his colleagues have conducted an admittedly-small, but exceedingly well-controlled, prospective study which has demonstrated that 6 of 12

patients anesthetized with methoxyflurane developed high-output renal insufficiency after operation, and all 12 patients showed findings of renal dysfunction in one form or another. None of the control patients, who were anesthetized with halothane, showed any signs of renal dysfunction and/or damage. Furthermore, it appears that this may be an inherent pharmacological property of the drug and its metabolism, and not an occasional hypersensitivity reaction as has been postulated for halothane hepatitis. Whether this nephrotoxic effect is due to methoxyflurane, or its metabolites, or both, remains to be established. Mazze and his colleagues have presented a very solid argument that the specific nephrotoxin is a metabolic product, namely, the fluoride ion,¹⁷ and this contention is supported by others in pharmacological circles.

Item. A 24-year-old secretary underwent spetal nasal reconstruction under anesthesia produced by repeated, intermittent injections of Ketamine. Operation proceeded smoothly, with apparently complete analgesia despite wide-open eyes, marked lacrimation, profuse sweating, and a moderate hypertension. The recovery period was tempestuous, however, and the patient was exceedingly apprehensive and aggressive in the Recovery Room. She stated repeatedly later that she felt that she was dead, without arms or legs, floating only as a torso—her soul—in space toward heaven. Her dreams—or hallucinations—continued almost undiminished in either frequency or intensity for a period of two weeks, an unusually long time, at which point she sought psychiatric help.

Item. A 42-year-old housewife was undergoing partial thyroidectomy under endotracheal cyclopropane anesthesia. The operation had been in progress for about an hour and a half when the anesthesiologist, who was assisting respirations with his right hand, reached forward with his left hand to adjust the connection of the Y-piece to the endotracheal tube. There was a sudden, deafening detonation, which shattered the anesthesia machine, showered the room with sharp fragments, and hurled the anesthesiologist against the wall. There was also a softer, muffled explosion, which no one heard because of the deafening noise of the first. This was the patient's lungs rupturing, causing instant death.

The case against flammable and explosive anesthetic agents has been built on tragedies just as this, and has gained considerable momentum because of the introduction of halothane and other non-explosive agents and techniques. The cost of building operating room facilities which are in accord with N.F.P.A. regulations, and therefore safe for use with flammable anesthetics, is considerable, and some hospitals have simply forbidden the use of such agents and saved

construction costs. Other institutions have provided so-called mixed facilities, with some operating rooms constructed and equipped for the use of explosive anesthetics, while the rest are safe for only the use of non-explosive agents. The folly of these approaches may become evident if N.F.P.A. manual on "The Safe Use Of Electricity In Hospitals" ceases to be merely an informative booklet, as at present, and becomes incorporated into the National Electric Code as either recommendations or regulations, since a number of the same construction standards which are necessary for the safe use of explosive and flammable agents will then also be included to provide electrical safety—and it will cost as much or more to convert existing operating room facilities as it would to have built them in accordance with the N.F.P.A. regulations in the first place.

Item. A 45-year-old man was given spinal anesthesia for excision of a torn left semi-lunar cartilage of the knee. Intra-theal puncture was made without difficulty, and 10 mgm. of pontocaine in dextrose was injected without any complaint of pain and with the onset of satisfactory analgesia. Operation proceeded expeditiously and without untoward incident. The following day, however, the patient was unable to lift his legs, which both felt numb and useless, and he had retention of urine. The next day he was incontinent of both urine and feces, and there was sensory loss up to and including the lower abdominal wall. Over the course of the next two months, after some initial improvement which permitted walking with the aid of sticks, there was further deterioration and increasing occurrence of uncontrollable and exquisitely painful flexor and adductor spasms. A myelogram was performed which revealed arachnoiditis above L 1 and complete occlusion below this level.

We need not become embroiled in a discussion of the origins of post-spinal arachnoiditis. The fact remains that, for one reason or another, disasters have occurred following spinal anesthesia, and in some areas of the country have greatly limited—or even eliminated—its use. This is too bad, for spinal anesthesia actually is probably one of the anesthesiologist's safest techniques under the proper circumstances; but the appearance of a paralyzed patient in front of a jury is a medico-legal nightmare of hideous proportions.

For a variety of pharmacological, physiological, immunological, physical and legal reasons, therefore, Balanced Anesthesia is returning to the anesthetic scene today. The visit has been greatly facilitated by the newer and happier reports of the pharmacology of the narcotics; and made possible, really, by the extensive use of artificial respiration in the Recovery Room. It is a much more sophisticated and mature

form of Balanced Anesthesia than we have known in the past, featuring cautious induction of anesthesia with small, incremental intravenous doses of Innovar, Fentanyl, Valium and morphine; maintenance of anesthesia with nitrous oxide, and fairly massive doses of both curare and morphine; and controlled respirations well into the post-operative period. There are no valid statistics as to the results as yet, despite the millions of cases performed with this technique, or variations of it; and the fact that it is often employed for massive surgery performed on serious-risk patients is going to make statistical comparisons difficult to come by for some time, probably. But certain it is that Balanced Anesthesia is revisiting.

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Hemoglobinopathies and Anesthesia

A Review and Commentary

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Abstract—The commonest cause of death during anesthesia is hypoxia.¹ Some patients with hemoglobinopathies are at risk if exposed to the slightest degree of hypoxia during anesthesia. In order to adequately treat patients with hereditary hemoglobinopathies a review of the normal structure of hemoglobin and the chemical abnormalities of these hemoglobinopathies will be presented.

The clinically significant conditions to be reviewed are sickle-cell anemia, sickle-cell trait, mixed sickling hemoglobinopathies, thalassemia, and methemoglobinemia. Their phenotypic, genotypic, and chemical abnormalities will be reviewed. In order to avoid catastrophic complications during the peri-operative period in patients with hereditary hemoglobinopa-

thies a method of pre-operative evaluation, pre-operative preparation, and intra-operative management will be suggested.

Introduction

The commonest cause of death during anesthesia is hypoxia (about 10,000 annually in the United States of America).¹ Probably thousands of patients experience mild degrees of transient hypoxia. Some patients with hemoglobinopathies are at risk if exposed to the slightest degree of hypoxia during anesthesia. Hemoglobinopathies are prevalent among Italians, Greeks, Portuguese, and Negroes; and increasing numbers of these people are immigrating to North America. Therefore the anesthetist must be alert to recognize the anesthetic risk these patients present.

Normal hemoglobin is composed of four identical heme molecules, one each to the four polypeptide chains which make up the globin fraction.² Adult hemoglobin (HbA) has two α chains (141 amino acids) and two β chains (146 amino acids).^{2, 3, 4} Fetal hemo-

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globin (HbF) has two α and two γ chains.⁴ The γ chains contain the same number of amino acids as the β chains but 30 of them are different.⁴

The ability of hemoglobin to carry out its functions as a transport of oxygen and carbon dioxide and as a body buffer depends on its chemical structure.² For instance, the oxygen affinity of HbA at pH 7.4 is identical with that of HbF at pH 7.2 because of the chemical differences in the two molecules.⁴

The disorders called "hemoglobinopathies" arise when there is a defect in structure of the globin moiety. Although, for the sake of this discussion, depressed synthesis of a whole polypeptide chain (thalassemia) will be included under this term. The chemical differences in structure give rise to different physiochemical properties which can be identified by such techniques as electrophoresis, chromatography, alkaline denaturation and tryptic digestion. The thalassemias can be identified by finding decreased hemoglobinization of cells, and an alteration in the ratio of normal hemoglobin in the cell. Chemical analysis of the actual amino acids now allows us to establish the exact defect in any given hemoglobin.

The hemoglobinopathies of greatest clinical interest are those produced by changes in amino acids of the β chain of the globin moiety, such as sickle-cell anemia, sickle SC disease, hereditary methemoglobinemia and β thalassemia.⁴ (Figure 1) The clinical description of each and the challenge it presents for the anesthetist will be discussed.

Sickle-Cell Anemia

Sickle-cell anemia is a hereditary hemolytic anemia confined almost entirely to Negroes.⁶ Henrick in 1910 reported that erythrocytes of patients with this condition assumed a sickle shape when deprived of oxygen (sickling phenomenon).^{7,8} These patients are homozygous for the S-hemoglobin defect (ss). Sickling also can occur in many Negroes, who are heterozygous for the defect, without apparent hemolytic anemia (sickle-cell trait).^{7,8} The trait occurs in 30% of the natives of East Africa and 20% of the natives of West Africa and is believed to have been introduced to this continent by slaves brought from West Africa so that the trait now occurs in 8.5% of American and 10.4% of Jamaican Negroes.⁷ It is not confined to Negroes alone having been reported as present in 17% of a small community of Greeks.^{7,9} The sickling phenomenon also occurs when the sickling defect (HbS) is combined with another abnormal hemoglobin such as HbC (i.e. HbSC).⁷

The structure of HbS and HbC is identical with that of HbA except for the substitution of valine or lysine, respectively in the sixth position of the β chain,^{4,6} (see Figure 1). The presence of HbS is determined by the inheritance of an autosomal gene for the phenomenon.^{7,8} In the homozygous state only HbS is formed; in the heterozygous state both HbS and HbA are formed.⁸ If an individual inherits the gene for HbS along with a gene for another abnormal hemoglobin (HbC), a mixed sickling hemoglobinop-

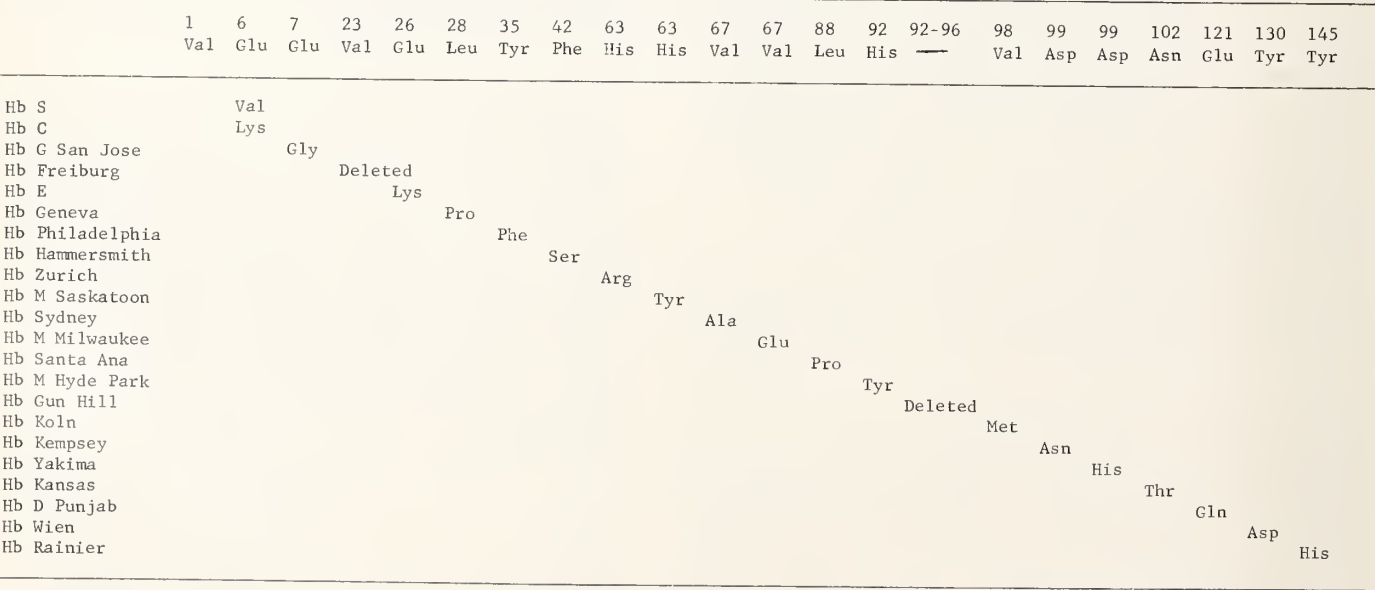


Figure 1
Changes in the Beta Chain of Globin's Amino Acids occurring in different Hemoglobinopathies.

athy (HbSC) results⁷ (Figure 2 and Figure 3). The symptoms of sickle-cell anemia often simulate the symptoms of rheumatic fever, various neurologic disorders, osteomyelitis, and acute conditions of the abdomen such as peptic ulcer and renal or biliary colic.^{5, 6, 8} The correct diagnosis can be made if the blood of every negroid patient is examined for sickling.^{7, 8} The test is as easy as a hemoglobin estimation. A drop of blood is added to a solution of sodium metabisulphite, a reducing agent, on a slide and the preparation is examined microscopically.⁷ If sickling is detected, the abnormal hemoglobins may be identified by electrophoresis so that the genotype of each hemoglobin fraction is defined.⁷

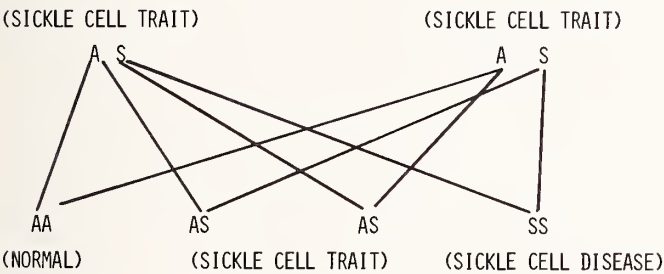


Figure 2
Inheritance of Sickle-Cell Anemia

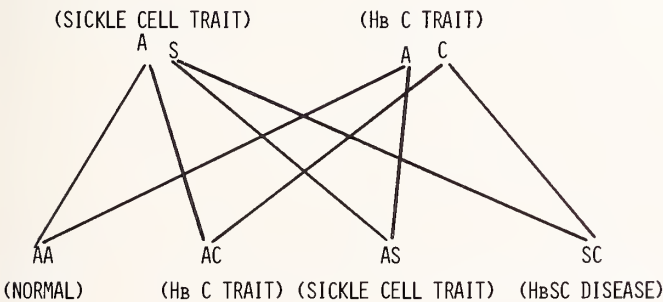


Figure 3
Inheritance of HbSC Disease

When erythrocytes containing HbS are rendered hypoxic, the Hb is reduced.^{7, 8} Reduced HbS is much less soluble than reduced HbA, and forms long, insoluble, intracellular chains which distort the cell membrane.^{7, 8} As a result the cell becomes sickle-shaped, osmotically fragile and short-lived.^{7, 8} The degree of hypoxia required to produce sickling depends on the proportion of HbS present.⁷ In sickle-cell anemia the erythrocytes contain only HbS, so that a small decrease in oxygen tension may provoke massive sickling.⁷ On the other hand, in sickle-cell trait and the mixed sickling hemoglobinopathies such as HbSC disease, the proportion of HbS is lower and the critical degree of hypoxia rarely occurs *in vivo*. There-

fore many carriers of the trait are usually asymptomatic.^{7, 8} Sickling produces anemia which in classical sickle-cell anemia is moderately severe and constantly present.^{5, 6, 7, 8} It is unusual for the hematocrit to exceed 30% or the hemoglobin 10gm%.⁷ Most patients with sickle-cell trait and HbSC disease are free from anemia during asymptomatic intervals.^{6, 7} The excessive rate of erythrocyte destruction is partly compensated for by increased erythropoiesis, but this is insufficient to maintain normal hemoglobin levels.^{7, 8} The serum bilirubin level is raised and patients are often jaundiced.^{6, 7} A high reticulocyte count is common.^{6, 7} More than 50% of the total red cells are "target cells."^{6, 7} A polymorphonuclear leucocytosis, present especially during crisis, should not necessarily be interpreted as being due to infection.⁷ Episodes of acute anemia often due to sudden transient bone marrow failure may be superimposed on chronic anemia causing a "hematologic crisis."^{7, 8} In addition if sickling is extensive, the spleen and liver will sequester deformed erythrocytes leaving a frequently fatal deficiency of circulating red blood cells.⁷ Sickled erythrocytes in the blood increase its viscosity, and sludging appears in areas of sluggish flow.^{7, 8} Ischemia, possibly accentuated by vascular spasms follows, causing further sickling (Figure 4).^{7, 8}

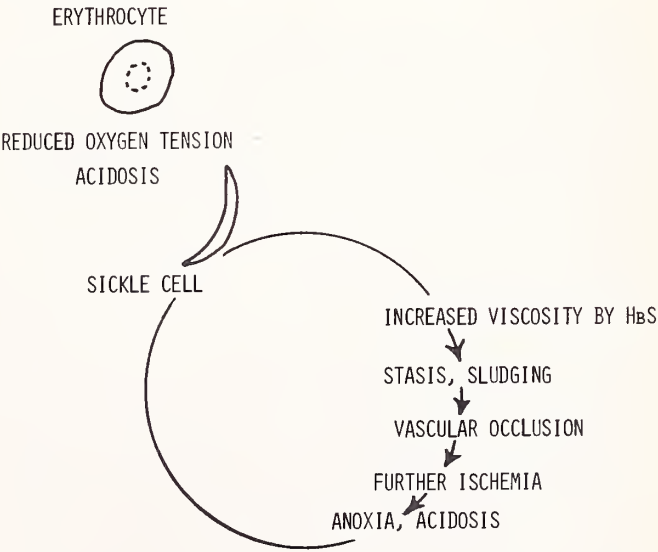


Figure 4
Vicious cycle in the development of Sickle-Cell Anemia

The clinical crisis, in which the patient experiences periodic episodes of pain in the abdomen or limbs accompanied by malaise and fever, is due to temporary blockage of small blood vessels leading to ischemia and infarction of surrounding tissue.^{7, 8} In children with sickle-cell anemia the enlarged spleen is

progressively destroyed by repeated infarction and fibrosis, a process described as "autosplenectomy."^{7,8} Because of the increased metabolic activity of the liver to dispose of hemolyzed red cells, hepatomegaly often occurs in young children.⁸ Repeated pulmonary emboli with infarction lead to loss of lung tissue and cor pulmonale.⁸ Cardiac failure may occur as the myocardium, weakened by anemia, fails to withstand the strain.^{7,8} Effects on the nervous system will depend on the site of the infarction.^{7,8} Transient blindness due to retinal infarction has been noted.⁷

Patients with sickle-cell trait seldom suffer clinical crises unless subjected to exceptional ischemia and hypoxia, as in pneumonia, alcoholic intoxication, ascents to high altitudes, dehydration, poorly managed anesthesia, violent exertion, acute febrile illness, severe trauma, pregnancy, or drug ingestion.^{7,10}

In the mixed hemoglobinopathy, HbSC disease, clinical crises and infarction are less common than in sickle-cell anemia.^{7,8,10} However, it has been noted that vessels in the head of the femur are particularly prone to infarction leading to destructive aseptic necrosis.⁷ Furthermore, it has been seen that patients with the mixed hemoglobinopathy have died during or following anesthesia.¹⁰

Anesthesia

There are minor operations but no minor anesthetics. This is doubly true for patients with hemoglobinopathies.

Reduced oxygen tension subjects "sicklers" to grave danger.⁹ In sickle-cell anemia mild hypoxia, in sickle-cell trait or mixed sickling hemoglobinopathies moderately severe hypoxia, may precipitate a clinical crisis.^{7,8,9} Preoperative, intraoperative and postoperative care must be geared to prevent hypoxia.^{7,8}

Preoperative Preparation

The patient is anemic, but his iron stores are adequate so iron supplement is not necessary.^{6,7,8} Preoperatively multiple small transfusions of packed red blood cells can be given to maintain the hematocrit at 27%. This has a dual effect. It acts as an exchange transfusion allowing the patient to come to the operation with a greater number of erythrocytes containing HbA. Also it depresses erythropoiesis so less HbS is produced from the patient's marrow.^{5,7} Timing of the operation is important. The hemoglobin level varies cyclically. If the operation is not urgent, it should not be undertaken until the hemoglobin level is at a peak, jaundice is absent, and marked reticulocytosis indicates active erythropoiesis.^{7,8,9}

Alkalosis renders the erythrocytes in sickle-cell anemia less sensitive to hypoxia. Inducing a state of metabolic alkalosis by administering sodium bicarbonate before, during and after the operation may protect the patient's erythrocytes from sickling.^{7,8} In elective

surgery 0.5 - 1 gm/kg/day orally or in the case of emergency surgery, sodium bicarbonate 3.3 m. equiv/kg/hr over 90 minutes is recommended.⁸

Deficiency of the enzyme glucose-6-phosphate dehydrogenase protects the red cell against sickling, presumably by delaying oxidative reduction of HbS.⁸ This enzyme can be suppressed by the phenothiazine derivatives but further investigation is necessary before recommending their use.⁷

The association of acute infection with sickling crises has often been noted.^{5,6,7,8,9} Because infection and fever increase oxygen requirements, they should be treated vigorously.^{5,7,8}

Intraoperative Management

The anesthetic technique adopted must avoid hypoxia, acidosis, stasis and cooling and must not cause respiratory depression.^{5,7,8} Actually local analgesia with the prevention of stasis, cooling, and respiratory depression would be preferable. If an inhalational technique is utilized hyperventilation should be avoided in that a respiratory alkalosis is produced causing a secondary fall in plasma bicarbonate and also vasoconstriction in the skin and splanchnic areas.⁷ These factors may increase sensitivity of HbS to hypoxia.⁷ Protection against sickling is achieved by elevating the plasma bicarbonate level, rather than changing the pH.⁷

Hemostasis due to hypotension or bad positioning of the patient on the operating table must be avoided.^{7,9} A tourniquet may be required to provide hemostasis and facilitate orthopedic operations. Tourniquets should not be applied to any patient with sickle-cell anemia.^{7,8} The procedure appears safe in cases of sickle-cell trait and SC disease, if the limb is first carefully exsanguinated with an Esmarch's bandage. Cooling should be avoided intraoperatively in patients with sickling states because it increases the viscosity of the blood leading to stasis and sickling of erythrocytes.^{7,8}

While the need for caution in anesthetizing patients with sickle-cell anemia is recognized, it is believed that there is no increased risk in anesthetizing patients with sickle trait or mixed sickling hemoglobinopathy. A recent report of five deaths during or shortly after general anesthesia in patients with sickle-cell trait or mixed sickling hemoglobinopathy dispels this belief.¹⁰

General anesthesia is not necessarily harmful to patients with sickle-cell disease.¹¹ Probably any anesthetic agent can be used if hypoxia, acidosis and stasis are avoided.⁷ If hyperventilation is used, the addition of a vasodilator such as halothane is indicated.⁷

Reports indicate that there is a low level of serum cholinesterase in patients with HbSC disease.¹² Because of microinfarction, slugging, and hemolysis resulting in bilirubinemia there is a certain degree of

liver damage in sickle-cell patients. Therefore, care must be used in administering succinylcholine and non-depolarizing muscle relaxants.

Postoperative Treatment

Some hypoxia may occur after any anesthetic and sufficient oxygen should be administered during the post-anesthetic recovery period to avoid it.⁸ Alkalinization will not relieve a crisis once it has begun but should be continued during this period to avoid precipitation of a crisis.⁷

Postoperatively, anemia may develop rapidly due to an aplastic crisis. Careful observation of the patient's hemoglobin level is required and transfusion is necessary if the hemoglobin level falls below 6gm%.⁸

Although seldom used today, several agents are available to avoid sludging and stasis, with resultant acidosis and sickling. Magnesium sulfate intravenously may prevent formation of a thrombus by mobilizing sludged red cells, dilating the vessel and prolonging the clotting time.⁷ Low molecular-weight dextran has been said to mobilize sickled cells trapped in areas of sluggish blood flow, but reports are conflicting.^{7,8} Even more recently, the intravenous use of urea is suggested for prevention and treatment of sickle-cell crisis.¹³

Thalassemia

Thalassemia is an inherited disorder seen in Italians, Greeks, Syrians and Armenians.⁶ It is due to a defect in a single recessive Mendelian gene that leads to the suppression of the production of either the α or β chain of the globin moiety causing α or β thalassemia respectively.⁴

Mutant operator genes for the synthesis of the α or β chains are allelic or closely linked with the structural genes regulating the amino acid sequences in the chains, and are responsible for the various other forms of thalassemia.⁴ In thalassemia major, the severe homozygous state, there is a severe depression of the production of the β chain with a compensatory increase of the α chain.⁴ As a result there is some normal hemoglobin (HbA) but a compensatory increase in the amount of HbF present.⁴ In thalassemia minor, the less severe heterozygous state, only one gene is inherited and the interference with hemoglobin synthesis is milder.⁴

Clinically, thalassemia major is not distinguishable at birth because the infant makes normal amounts of HbF. It usually develops between 3-9 months of age or insidiously with the first two years of life.⁶ The condition is marked by pallor and great enlargement of the liver and spleen, and by microcytic, hypochromic anemia, targetting immature erythrocytes, leukocytosis and bilirubinemia.⁶ Urobilinogen is found in the stool and urine.⁶ The child may have mongoloid

features due to marrow hyperplasia which causes thickening of marrow containing bone.

β thalassemia minor may be so mild, it goes unrecognized. Splenic enlargement with mild microcytic, hypochromic anemia and the presence of target cells are characteristic.⁶

Thalassemia is suspected from the family history and confirmed by clinical signs, blood smears and hemoglobin electrophoresis.⁶ It should be differentiated from other forms of congenital hemolytic anemias, plumbism, and other acquired forms of refractory anemia.⁶

Anesthesia

Children with thalassemia major usually live to fifteen or twenty-five years of age. They usually come to operation for a splenectomy. In thalassemia minor, the individual usually lives a normal life span and has no greater incidence of surgery than normal persons. The anesthetist's concern in treating patients with thalassemia is the anemia and its sequelae such as increased work load on the myocardium and the decreased oxygen carrying capacity of the blood, especially in the coronary circulation.

Furthermore, because of their facial deformity with overgrowth of the maxillae, thalassemic patients may offer a difficult intubation. Therefore, before a thalassemic is made apneic, one must be sure to have a patent airway.⁵

Methemoglobinemia

Methemoglobinopathies may be due to: (1) a drug induced conversion of normal hemoglobin to methemoglobin, (2) an enzyme defect or (3) an inherited abnormal globin (HbM). For the sake of this discussion we will be concerned with the third type, inheritance of HbM. Hereditary methemoglobinemia (HbM) described in families of German, Greek, Swiss and Italian descent is transmitted by a non sex-linked dominant trait.⁶ The gene is responsible for substituting another amino acid for that normally found at the 63 position of both beta chains (Figure 1).⁴ Methemoglobin is an oxidation product of hemoglobin in which the iron is in the ferric state and therefore cannot bind oxygen or carbon dioxide.⁶

The only clinical sign is cyanosis, usually appearing first at six weeks to six months of age when the methemoglobin level in the blood reaches 1.5gm/100ml.⁶ HbM, unlike most of the other hemoglobinopathies, is not associated with hemolytic anemia.⁶

Anesthesia

Since methemoglobin is incapable of combining with oxygen, the symptoms of methemoglobinemia are attributable to the hypoxia produced by the lowered oxygen carrying capacity of the blood. An anesthetic technique for such patients requires a

knowledge of the amount of methemoglobin as well as normal hemoglobin in order that one can deliver an adequate partial pressure of oxygen.⁵

Commentary

The normal structure of hemoglobin and the chemical abnormalities of the hemoglobinopathies have been presented. Hemoglobinopathies are abnormalities of the structure or rate of synthesis of the globin moiety. The clinically significant conditions are sickle-cell anemia, sickle-cell trait, mixed sickling hemoglobinopathies, thalassemia and methemoglobinemia.

Because the incidence of affected individuals is increasing in North America, a simple sickle-cell preparation in all negroid patients and a hemoglobin electrophoresis for each anemic patient should be performed preoperatively.

Patients with a hemoglobinopathy should be pre-oxygenated, anesthetized carefully with at least 35% oxygen, and oxygen supplement postoperatively. In addition, stasis, acidosis, and cooling must be avoided in sickle-cell anemia. Local analgesia without the use of a tourniquet may be preferable, but any general anesthetic appears suitable which prevents hypoxia, acidosis, vascular stasis, and hypothermia.

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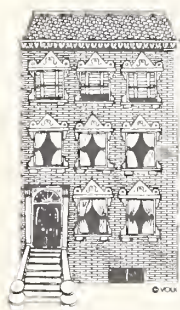
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AMA National Leadership Conference

Newton N. Minow, J.D.

As we open a New Year and our nation's Bicentennial, many Americans, and I'm sure many physicians, wonder whether there is much to celebrate. Confidence and trust in our institutions and in our political leaders is at a low point. The problems of foreign affairs, inflation, racial equality, unemployment, urban and environmental decay seem insurmountable. For physicians and surgeons, the issues of ever more burdensome malpractice expenses, increasing governmental regulation, soaring costs, excess demand on resources and time—all these problems seem insoluble.

If we wonder whether there is much to celebrate on our 200th birthday, let me share with you something I read not long ago:

"The most divisive war in our history still divides Americans. A United States Army force has been defeated by ill-equipped guerillas. The American elective process has been contravened. The most deadly sort of racism is rampant and the law is oppressive. A Presidential administration has been exposed as corrupt. The economy is in a shambles. Crime is rising. Our citizens live in fearfully overcrowded cities and many of their children are denied a basic education.

Is this a time to have a national birthday party?

All of these points were raised when the United States was celebrating its Centennial in 1876. The memory of the Civil War was still vivid, and even as Philadelphia began its Centennial observance, word came that General Custer's command had been slaughtered at the Little Big Horn. Samuel B. Tilden had outpolled Rutherford B. Hayes but Congress handed the Presidency to Hayes. The Ku Klux Klan was riding high and Texas was living under the Lynch Law. The Grant Administration had been virtually dismantled by scandal. The country was still reeling from the 1873 panic and workers found their incomes slashed by as much as 50 per cent. In Philadelphia the murder rate jumped 75 per cent during the Centennial year. In New York more than 250,000 people were found living in a single square mile area. Of 600 school-age children living in the Five Point Section of New York, only nine were attending school.

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Mr. Minow presented this address before the 1976 AMA National Leadership Conference in Chicago on January 23.

Why celebrate then? Why celebrate now?"

(New York Times, May 18, 1975)

The best reason for celebrating an anniversary of our nation is that we should pause to reflect on what we were—and what we are—and what we are to become.

What we are to become is a crucial question for all Americans in 1976. In this bicentennial year, what is the overriding issue facing Americans in general, and professionals in particular? I submit that it is the need to reconcile the rights of individuals with the demands of an increasingly complex and regulated society. Throughout American history there has always existed tension between the needs of individuals and those of society at large. But the creative balance between individual rights and collective needs is threatened today by the unprecedented growth and proliferation of government and bureaucracy.

When government deals with a problem in this vast and varied nation, it necessarily deals with the problem in mass. It attempts to write rules and regulations designed to cover every situation throughout America. In the field of health care, government deals with millions of patients, hundreds of thousands of doctors, thousands of hospitals, and billions of dollars.

The hallmark of professionalism, on the other hand, is an abiding and overriding concern with the rights and needs of individuals. Physicians and attorneys owe duties to society at large, but their paramount obligation is to provide the very best service to individual patients or clients. When a physician cares for a patient, he or she deals with one patient only, one individual, one life. And no two patients, no two lives are alike.

There are those who suggest that the answer is to cut back on government. Much as we might wish that that could be done, I believe big government is here to stay. Even if governmental budgets and payrolls were cut in half, there would still remain a mammoth governmental and bureaucratic establishment in our nation. HEW's regulatory output is now some 5,000 regulations a year. The health industry is now one of the largest in the country, employing 4.5 million people, double the number 25 years ago. Spending for health now is more than \$100 billion each year, more than 8% of the gross national product.

A direct and necessary consequence of governmental growth is an ever increasing danger that the rights and needs of individuals will be neglected. Physicians, indeed all professionals, must work to protect these individual rights and serve these individual needs.

Given the continuing existence of mass government and bureaucracy, the task for the professions is to respond vigorously and creatively to governmental actions which threaten the values of professionalism and the rights of individual citizens—but the task for the private professions is to act effectively in the public interest.

As a lawyer for twenty-five years in both government and private practice, I have learned certain lessons. In dealing with government, there is a time to fight. On some issues, the only response must be “Never—This far and no farther.” On other issues, the more productive response is to persuade and negotiate. Most laws, regulations, and government programs are attempts to solve serious social problems. In the long run, the successful strategy is to know when to stand firm and when to compromise. It is not enough simply to oppose ill-conceived laws and regulations; it is also necessary to fashion constructive alternatives. And who knows more about how to improve health care than you, the physicians of America?

Our firm, Sidley & Austin, has served as legal counsel to the American Medical Association in a number of matters the past few years. It has been a special privilege to work with Dr. Sammons and Bernie Hirsh and their colleagues. This evening, I would like to share with you two examples of the way in which your Association has responded and should respond to governmental actions which pose substantial danger to the most deeply held values of professionalism.

Last year the United States Department of Health, Education and Welfare promulgated utilization review regulations requiring that every hospitalization of every Medicare and Medicaid patient be reviewed by a committee within 24 hours after admission. While the American Medical Association supports and has long worked to develop reasonable systems of utilization review, the Association was strongly opposed to the HEW scheme. Indeed, the regulations posed an almost classic example of conflict between governmental objectives of mass regulation and individual needs. The government sought to impose a uniform system of admission without regard to the individual circumstances of particular patients. The Association recognized that requiring 24-hour review by committee for all patients in all circumstances would injure those patients for whom meaningful review could not take place within the impossibly short period of 24 hours.

Therefore, for the first time in its history, the Association brought suit in federal court against HEW regulations, and, after a strenuous legal battle, obtained a preliminary injunction. The government appealed, but the United States Court of Appeals,

sitting in Chicago, affirmed the injunction. These court decisions were important for your profession and for the individual patients whom you are sworn to serve. They constitute *the first* judicial recognition that the principle written into the Medicare Law that the federal government may not interfere with the practice of medicine can stand as a beacon to protect the rights of individuals.

While a significant victory, the injunction was only preliminary—a legal mechanism to preserve the *status quo* pending a full trial on the merits. Moreover, even if the Association were to prevail at the trial on the merits, HEW could make relatively minor changes in the regulations and thus force the Association to start a new lawsuit all over again. The Association decided, therefore, to sit down with HEW and attempt to work out a solution.

The litigation was important because it got HEW to withdraw the challenged regulations and to come to the conference table. The results of the discussions that followed are most promising. Although no new regulations have as yet been issued, HEW appears to have committed itself to a more flexible approach—taking into greater account the circumstances of individual patients and local institutions. And Congress itself has now acted to make clear that it never intended 24-hour review of the admission of every Medicare or Medicaid patient. In sum, the AMA, by combining aggressive and prompt litigation with a reasonable and constructive approach, was able to protect the rights and needs of individual patients and their dedicated physicians in a meaningful way.

A second example of the crisis facing the medical profession has only just begun. As you all know, the Federal Trade Commission, without prior notice, filed a formal complaint last month challenging the AMA's code of ethics concerning solicitation of patients and advertising of medical services.

There is perhaps no better example of the clash between governmental mass “solutions” and individualistic professional values. The Federal Trade Commission seeks to analogize medical services which are tailored to the specific needs and circumstances of an individual patient to mass marketed consumer products such as soap and deodorant. Rather than stressing quality of care and independent professional judgment concerning the needs of a particular patient, the FTC would encourage and permit physicians to promote and sell medical care on a mass basis.

Santayana once said that those who do not study history are condemned to repeat it. In closing its eyes to the considerations of professionalism that led to the ban on solicitation by physicians, the FTC would again expose Americans to the deception of the quack and the seduction of the huckster. As former chair-

man of the Federal Communications Commission, I am reminded of the fight in the 1920's between the government and Dr. J. R. Brinkley of Milford, Kansas. The FCC fought, successfully, to stop Dr. Brinkley from advertising his medical practice on the radio, in a most unorthodox manner. Here's the way it was:

"In his photographs distributed throughout KFKB's listening area, Dr. Brinkley looked unassailably professional in spade beard and pince-nez. On the air, his was the voice of ancient wisdom as he dispensed prescriptions on MEDICAL QUESTION BOX, broadcast on KFKB three and a half hours a day. The prescriptions followed instant diagnoses that Dr. Brinkley made from symptoms described in letters from listeners. They were announced in coded numbers and were obtainable only from druggists who subscribed to an association that Dr. Brinkley ran. Among the more publicized Brinkley innovations was the surgical implantation of goat glands, said to perform miracles for the lucky patient's sexual powers."

Once again, however, it is not enough simply to say, "No." The AMA must take the lead in finding positive and constructive solutions to the problem of providing consumer information. Local medical societies have for years sponsored physician referral services. Now the task is to make a greater effort to alert the average layman of their existence and to devise other solutions to the problem of providing adequate consumer information without solicitation. Only through constructive alternatives will the Association most effectively accomplish its mission to defend professional values and thus to secure individual rights.

The other day, I came across a speech in which Kingman Brewster, President of Yale, thoughtfully analyzed the problems private universities face in preserving academic freedom as they become more dependent on government support. Dr. Brewster said this:

"First, we should exhaust ways of encouraging private decisions in the public interest before resorting to government allocations or regulations. Second, when government must act as investor in defense, health and education, it should use market mechanisms so that who benefits will not depend on the favoritism of bureaucrats and politicians. Third, when government has to exercise its discretion in awarding favors or imposing penalties, we should find some way of assuring redress against its abuse."

These three points apply equally to the efforts and principles which I believe the American Medical Association, acting on behalf of America's physicians, must stress, over and over again—to preserve professionalism, to preserve individualism and to preserve the integrity of the relationship between an individual patient and his physician.

In closing, I'd like to make a few more personal comments. We live in a time of such rapid development that few of us realize how our most fundamental notions are changing. Take the concept of "risk." Formerly, people believed that they bore the risk of misfortune befalling them through no fault of their own. If something went wrong, they would have to rely on their resources or those of their family. Today, people increasingly believe that someone else should take the consequences of misfortune. They would hold society responsible if things go wrong.

When I was in law school, we were taught to ask, "Who is at fault?" My daughter, in law school today, is taught that the real question is "Who is best able to pay?" Therein lies the root of the malpractice crisis.

You the physician, cannot take all the risks simply because you have greater resources than other segments of society. But unless physicians want to report in the tricentennial year that there once was a concept called professionalism, it is not enough to long for yesterday. You will have to find new solutions, new approaches, and new ideas. The ideas and debate thus far have, for the most part, amounted to plugging fingers in the breaking dike. Far more fundamental and basic changes are needed, and I know that your general counsel, Bernie Hirsh, has some concepts and approaches which go to the roots of the problem—not merely its symptoms.

Individual physicians are among the most respected members of our society. Almost every layman has personal knowledge of situations in which physicians have taken decisive yet compassionate action to preserve life and health. Yet, physicians collectively are viewed with suspicion and mistrust. Part of this mistrust is a result of a general public cynicism toward any collective political activity, by any group. But I suggest to you that another reason for this suspicion is that physicians are so enormously busy in their individual professional lives and responsibilities that their collective acts are too frequently confined to resistance and opposition—negative actions which are perceived by the public (rightly or wrongly) as self-interested opposition to change.

As individuals and as members of organized medicine, you must speak out more on all issues confronting medicine and health. I urge you NOT TO confine your activities merely to a narrow range of issues affecting only physicians. Physicians should be speaking out—as you are beginning to do—on the effect of television violence on our youth, on the effect of pollution on our health, on crime and its relationship to our health, on occupational safety, on facilities for the handicapped, and on professional ethics—to name just a few. You are citizens as well as doctors. You represent some of the best minds in the nation. What

you think and what you have to say should be heard, not only in defense of the medical profession, but affirmatively for all of us, for your children and for my children, and for the quality of American life.

As we start our nation's third century, I leave with you President Kennedy's favorite story, one I heard him tell not long before he was killed. A French Mar-

shal named Lyautey was walking in his garden one morning with his gardener. The Marshal paused at a certain point, and asked the gardener to plant a tree at that spot the next day. The gardener said, "But the tree will not bloom for 100 years." The Marshal looked at the gardener, and replied, "In that case, you'd better plant it this afternoon."

Letter from . . . Zürich

The 8th of December 1974

PETER PAUL RICKHAM

I am still surprised that the happenings of the 8th of December 1974 did not cause even a ripple amongst medical men outside Switzerland. Certainly I have not yet met a British doctor who had any idea that something extraordinary happened then. Perhaps with galloping inflation and unemployment coupled with the rapid decline of the last remnants of the National Health Service, British doctors have other things to think about. Nevertheless, I thought that they might momentarily have stood still and wondered.

Before I tell you about the 8th of December I must very briefly explain the workings of Swiss democracy. Switzerland is a direct democracy: government and parliament can propose new laws, they can debate and vote on them; but they cannot pass them. Only the people, aptly called here the "sovereign," can pass laws. New laws can be proposed by government and parliament, but they can also be proposed by individuals or groups of individuals—for example, a political party—asking for a referendum, provided they have enough signatures to support their petition.

Switzerland is the land of free enterprise and the medical services are no exception. Ninety-five percent of the people are insured by private insurance companies for ambulant and

hospital treatment. I have no doubt that the standard of medical care is superior to that of any country I have visited, but there are imperfections in the system. There has long been friction between insurance companies and general practitioners about some payments. Hospital charges have doubled since 1970 and so insurance premiums have had to be raised and the state has had to pay a larger and larger share of the costs.

For a long time the socialist party, one of the three large parties in this country, has vociferously agitated for a state medical service. Enough signatures for their petition were quickly collected. They wisely refrained from saying in detail how much this would cost the tax payer (already the proportion of the gross national income spent on health is much higher in Switzerland than in Great Britain) and, although they suggested that the insurance companies could somehow be incorporated in their scheme, there was no doubt in anybody's mind that what they were after was a state medical service similar to that in Britain or Sweden.

The coalition government was apparently worried that the referendum might succeed and, as they usually do, put up counterproposals. What, they asked, did the doctors suggest? To an outside observer the reaction of the doctors was rather bewildering. The medical profession was disunited. Different health service plans sprouted like mushrooms after the rain. For somebody who had experienced 1948 in Britain there was a sense of déjà vu. Every doctor I talked to privately was convinced that the present system offered much better patient care than any of the new schemes, but to say it loudly was not progressive and would harm the medical man's "image."

Kinderspital, Zürich

PETER PAUL RICKHAM, MS FRCS, professor of paediatric surgery

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British Medical Education

John C. Marsh, M.D.

How does one become a doctor in Britain? In what ways does the educational process differ from that in the U.S.? These are the basic questions I've wondered about during a year spent in England and which I've tried to answer briefly in this article.

One of the most striking differences is that virtually the entire cost of medical education is borne by the government. Tuition is free and grants for living expenses and books are made according to need, the average grant being £ 600-700/year. Thus, although selection is by academic record and, sometimes, family or other connections, financial impediments to medical education do not play a major role. The government estimates the cost of training a doctor to qualification (i.e., the 5-year medical school course) to be about £ 28,000 (\$62,000). This fact is often mentioned when appealing to the patriotic duty of British-trained doctors not to emigrate.

The other major difference is the telescoping of the usual 7-8 years of pre-medical and medical school training in the U.S. into 5 or sometimes 6 years in Britain. Thus the doctor at qualification is about 2 years younger than his American counterpart, and, during the early years of his medical training, is still in late adolescence.

Secondary Education

Traditionally, at age 11 children were screened by examinations, for grammar schools for the brightest and college-bound, and "secondary modern" for everybody else. Today "comprehensive" schools are increasingly replacing this academic (and often sexual) segregation, being co-educational and offering courses for all students. There are strong political overtones, and the speed with which this transition occurs seems related to whether the Labor or Conservative party is in power, comprehensives being favored by Labor. The types of schools mentioned above are all state-supported; there are also schools which are partially self-supporting but aided from public funds ("direct grant" schools) as well as independent, private ("public") schools, such as Eton or Harrow. As of 1966, the proportion of English and Welsh medical students drawn from the three major types were: state supported: 43%; direct grant: 22%; private: 35%¹

Certain standard examinations are given to secondary school students. For the university-bound, the General Certificate of Education (G.C.E.) "O" (ordinary) levels and "A" (advanced) levels in various subjects are required (except in Scotland where almost all the educational processes are different). At age 14 secondary school students narrow down their curriculum in preparation for the "O" levels at age 16 (or earlier for very bright children). Although 5 "O" level passes are a minimum for university admission, many students obtain 8 or 9.

For the next 2 years students specialize even more for "A" levels, 2 of which are a minimum for university admission. Most medical schools require "A" levels in physics, chemistry, and either biology or mathematics. Oxford and Cambridge require additional examinations of their own, and the total preparation time may be 6 months longer.

Since non-medical courses are not available in the university-medical school curriculum, and the preparation for the "A" levels is largely scientific, it is apparent that the students' exposure to languages and the humanities occurs much earlier than in the U.S., and that an earlier decision regarding ultimate career must be made. Judging from my own children's experiences, a more rigorous exposure to many subjects occurs at an earlier age than in the U.S. I doubt whether the long-term exposure is any greater, however, when U.S. high school and college courses are considered.

Students wishing to be admitted to a medical school list their preferences in order; the schools do likewise and matching is done centrally. Women medical students comprised about 25% of the total a decade ago; the proportion is undoubtedly higher now. The academic record of women in medical school is somewhat better.¹

Although the pre-medical phase described above is usually taken in secondary school, some students in England, and most in Scotland, are exposed to it in the university itself. The "first M.B." (Bachelor of Medicine) examination has been given in such instances.

Medical School

The traditional medical school curriculum is divided into 2 years of pre-clinical studies and 3 years of clinical studies, culminating in the M.B., Ch.B. (Bachelor of Surgery) degree. The M.D. degree is a research degree. Oxford and Cambridge pre-clinical schooling takes 3 years, since a B. Sc. with honors in

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physiology is required. "Oxbridge" seems to do things differently from everyone else and to act very much in tandem, as befits its ancient medieval status. It reminds one very much of the Ivy League.

The pre-clinical course consists largely of anatomy, physiology, and biochemistry and lasts 5-6 terms (a term is 1/3 of an academic year). Pathology, pharmacology, and microbiology are taught in the 6th term and in the clinical course as well. Passage of the Second Professional Examination ("2nd M.B.") marks the transition to the clinical years. The fact that some medical schools had no clinical units (Cambridge) and some schools had only clinical facilities, (e.g., Westminster and St. George's Hospital Medical Schools), necessitating transfers, tended to accentuate this division.

The clinical part of medical school occupies 3 years, much of the time being spent as a clinical clerk attached to a "firm," that is, to a team consisting of a consultant, his senior registrar, and house-staff at various levels, caring for patients of a particular type for 2 months and spending the better part of 2 years at this. At the end of this time the student qualifies, usually by successfully passing the examination of his medical school. A very small number who fail (less than 5%) still qualify by passing the non-university examinations for the Conjoint Diploma as Licentiates of the Royal College of Physicians of London (LRCP) and Member of the Royal College of Surgeons of England (MRCS). About 30% of graduating students obtain this Diploma, most of them from London schools.¹ The British doctor at the time of qualification, or graduation, is probably better trained in general clinical medicine than his American counterpart.

A special word is in order about London medical schools. All 12 are officially part of the University of London. They admit about 1/3 of all pre-clinical students in Britain and graduate about 1/2 of all clinical students, since several schools with few or no clinical resources (especially Cambridge and Oxford) send students to them. The medical schools have largely developed around the various teaching hospitals, with little or nothing linking them. Indeed the hospitals and medical schools in London in their early stages were influenced much more by the professional bodies, such as the Royal Colleges and the Worshipful Society of Apothecaries, than by the relatively recent, loosely-knit University of London. Their prestige stems partly from the fact that their graduates attain the MRCP (Member of the Royal College of Physicians) or FRCS (Fellow of the Royal College of Surgeons) qualifications on average sooner than their provincial colleagues and therefore fill a larger share of consultant posts.¹ Unlike most of the non-London

schools they do not have strong ties to multi-faculty universities, upon which the recommended broadening of the pre-clinical curriculum depends. A drastic merging of the 12 schools to 6, with ties to other non-medical faculty, has been proposed to alleviate this problem,¹ but so far little has come of the proposal.

There are many suggestions for revision of the medical curriculum. The most prominent ones, from the Royal Commission on Medical Education,¹ include better integration of clinical and pre-clinical years with earlier exposure to patients, more electives, a 3-year pre-clinical course leading to a bachelor's degree, more emphasis on behavioral sciences, genetics, statistics and sex education, and a 2-year clinical curriculum with emphasis on group teaching by multiple faculty representatives from several disciplines rather than traditional division into medical or surgical rotations. Some of these reforms have been incorporated into the new schools at Nottingham and Southampton. They have been adopted more slowly, if at all, at the older institutions.

A note of caution has been sounded by one educator,² who points out that the relative youth of the British medical student makes difficult any wholesale adaptation of those curriculum reforms which allow self-design and a wide choice of elective courses. These are more suitable for the older, presumably more mature, American student.

Post-graduate Education

Having finished medical school and been awarded the M.B., Ch.B. degree, the young graduate must spend a statutory "pre-registration year" doing 6 months of hospital-based general medicine and 6 months of general surgery before being placed on the Medical Register, thereby being legally entitled to practice medicine. Most graduates try to remain in hospitals in the area of their medical school (indeed they are supposed to be in hospitals approved by it), but the two 6-month rotations may be in different places. There is no nationwide program analogous to the Internship Matching program in the U.S., although some schools attempt a computer matching for their graduates in area hospitals. Much depends on knowing a specific "firm" or consultant in one's clinical training days in medical school and on being known. Not all students can be accommodated in their local area and must go elsewhere, generally to less desirable jobs. The young houseman works very hard for long hours, typically on a 20-30 bed ward with as many as 3 different consultant-firms. Traditionally, he has been on call every other night or as often as 4/7 nights, but increasingly, as in the U.S., a switch to every third night is in vogue. Overtime pay has been given for more than 80 hours a week. Now the government is prepared to pay for more than 56

TABLE I
BRITISH HOSPITAL PHYSICIAN NUMBERS AND SALARIES

<i>British Term</i>	<i>American Equivalent (Approximate)</i>	<i>Approximate Salary (\$)*</i>	<i>% Born Overseas³</i>	<i>Total Number</i>
Preregistration houseofficer, "junior houseman"	Intern	6,750	20.6	2,048
Senior House Officer (S.H.O.)	Junior Resident	8,590	60.9	6,684
Registrar	Senior Resident	10,600	55.9	4,850
Senior Registrar	Chief Resident	11,880	25.4	2,055
Consultant	Specialist	16,600-23,500	13.2	10,765

*Reflecting 30% average raise in April, 1975.

hours; the junior hospital doctors want overtime after 40 hours. The salary scale for all hospital posts is standard (Table I). A major criticism of the pre-registration year has been that it involves too much work without adequate supervision and that often educational opportunities are negligible. An additional criticism of the entire house staff system is that there are very few structured, long-term training programs similar to residency programs in the U.S. and that training is a patchwork of self-devised training experiences with frequent disruptions and random drifting into various specialties because a job happens to be available.

The hierarchy of hospital jobs is shown in Table I. Following the pre-registration, or junior houseman year, analogous to the internship in the U.S., are jobs as senior house officers. These may be for 6 months or a year, and successive S.H.O. jobs may be held for two or three years. During this time the would-be consultant takes the examination offered by the Royal College of Physicians or Royal College of Surgeons to obtain the Membership (MRCP) or Fellowship (FRCS), respectively. For the former exam, Part I may be taken 18 months after qualification, and Part II three to four months later. In the past this examination was different among the larger cities (London, Glasgow, Edinburgh), but now it has been incorporated into a nationwide examination. Part I for the FRCS may be taken 12 months after qualification, but Part II is not taken until 4 years after qualification. At this point, a surgeon may be referred to as "Mr." instead of "Dr." Most of the jobs as registrars (See Table I) in the various specialties, and certainly consultantships later on, require the possession of the Membership or Fellowship in the appropriate Royal College. There is also a Royal College of General Practitioners. Comparable examinations are given in

obstetrics and gynecology, anesthesiology, radiology, radiotherapy, pathology and pediatrics for membership in the appropriate College.

Information about house staff jobs is based largely on word of mouth and on advertisements in the *British Medical Journal* or *Lancet*. These are filled at various levels by interview and decision by hospital boards. Jobs may depend largely not only on possession of the appropriate certification but also on recommendations from previous supervisors and the quality of the previous posts. It is clear then that in such a pyramidal system only top-flight people with the appropriate academic and professional credentials eventually get to be consultants. Others along the way may go into general practice or may decide on general practice from the outset, usually taking several years as a senior house officer first. Legally speaking, a doctor could join a general practice firm after only a pre-registration year. At the registrar level, specialization begins in earnest, and one must be a senior registrar before getting a consultant job. One may remain at the senior registrar level for a long time before obtaining a consultantship, and a person is usually in the late 30's or even early 40's before this is possible. Ten years ago, few people wanted to be general practitioners, but the financial situation has improved markedly for that area of medicine and is much more popular now among medical students than in the past. People who are stuck at the registrar level in a particular specialty, unable to get senior registrar jobs, may either emigrate, go into general practice, or sometimes switch to specialties in which competition is less intense. Consultantships depend on several years of excellent performance as a senior registrar. Publications are helpful, and the M.D. degree may also be useful, particularly for jobs in academic medicine. This is a research degree

awarded by one's medical school for subsequent work, which usually has clinical application.

A major criticism, therefore, of house staff training is that there are relatively few unified, structured, clinical training programs, and each year, or even every six months, a new job, often in a new hospital in a different community, must be found. As in the U.S., a large number of hospital jobs are held by foreign doctors.³ Recently much attention has been given to the fact that many of them are either not well qualified or have a poor command of English, or both, and an examination of foreign medical graduates similar to that given in the United States has been initiated.⁴

In summary, the basic differences in the British medical education system as compared to the U.S. are the following: the government bears the expense of the education, early decision-making to go into medicine must occur, medical students are several years younger than their American counterparts, and the period of clinical training is somewhat longer, both in medical school and after graduation from medical

school. The system of post-graduate education is rather random instead of being set up in structured residency programs, and there is very little freedom of opportunity with respect to the number of jobs available. British doctors are salaried by the National Health Service, and there are limited posts available in various geographical areas and in certain specialties.

Acknowledgments

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Ethics and Medical Experimentation: Some Unconfronted Problems

Thomas Halper, Ph.D.

Like an endless modern highway, the term "experiment" seems to go in opposite directions at the same time. Looking one way, we see it pointed toward the technical—test tubes, computers, and white-coated investigators searching for a wonder drug or constructing Frankenstein's monster. Looking the other way, though, we find it pointed toward the metaphorical, denoting any risky enterprise—"All life is an experiment," declared Justice Holmes, expanding on Robert Louis Stevenson's observation that "Youth is wholly experimental" and a seventeenth century poet's fatuous remark that dying is a "great experiment." At this point, the reader begins to wonder, with Alice, "whether you *can* make words mean so many different things." Presumably, however, the writers would echo Humpty Dumpty's riposte. "The question is," he said, "which is to be the master—that's all."

We cannot claim the luxury of arbitrary definition, but we can at least forsake the too narrow restrictions of the laboratory and the too broad extension to life itself. Viewed in this spirit, "experiment" becomes an effort to expand knowledge by means of an investigation, in which one or more independent variables are manipulated and controlled, while dependent variables are observed for concomitant variation. Medicine, of course, has flourished on experimentation, whether with drugs or surgical procedures or in innumerable other areas. But in recent years, concern has grown over the ethical implications of experimentation that a single-minded technocratic or scientific approach had earlier hardly acknowledged. Questions of risks and benefits for the subject, for example, or of his knowing and voluntary consent have been raised with increasing frequency and, occasionally, even stridency. And now, as a consequence of Department of Health, Education, and Welfare action, all medical facilities must utilize committees (Institutional Review Boards) to pass on the ethical permissibility of experiments performed under their auspices.

With much of this, as with any honest effort to confront a continuing and in a sense insoluble problem, it is difficult to quarrel. It is not necessary to recall the recent horrible specter of the Nazi doctors' grisly experiments to recognize that ethical considerations had been overlooked too long. But this is not the time to use hindsight to flagellate past practitioners. Naturally, the investigator, due to society's rough division of labor and specialization of function, was above all concerned with the search for truth. That was his peculiar task in the scheme of things. Secondly, we must in candor admit, he might have been concerned with the rewards significant discoveries might have brought him—prestige, promotions, higher income, and so forth. Ethical considerations, except in the most obvious sense that he trusted that the knowledge he sought would benefit mankind—were not likely to have been of real interest to him at all; and if he were to have remained pretty much the sole ethical judge of his own research, they might easily have been neglected. He might well have resented the new IRB committees as vultures feasting off his sweat and inspiration, as unnecessary and time-consuming meddlers unfit to rule on the legitimacy of his proposals. These reactions are understandable. Change, after all, is often discomfiting, and the creation of the committees entails a realization that investigators are not alone in asserting rightful interests to be respected in experiments; subjects, too, have interests, which must be protected in a systematic and effective fashion. In this, the current approach represents an attempt to improve upon a past that appears increasingly inadequate, and, as such, it is certainly a laudable effort.

Yet certain problems, like a winter cold, seem to persist. One is the problem of conflict of interest. We take it for granted that persons and institutions should not be judges and juries in their own cases, and regularly excoriate politicians for this failing. When a medical school passes on the proposed experiments of its own faculty, however, many of the same difficulties are raised. Would committee members be as rigorous with a colleague or friend as they would with a stranger? Would members rejecting a proposal feel that proposals of themselves or their allies might be subject to unfair scrutiny in retaliation? Would members' judgment be swayed by a desire to curry favor with their superiors? Would concern for their institutions' reputation or ambition cloud their

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thinking? These questions should not be construed as implying the existence of widespread abuse, for committee members surely are not predominantly fools or knaves. They are, however, human, and it would be a mistake, too, to conclude that they had somehow been immunized to threats and temptations as if to tetanus or smallpox. In any case, it is necessary not only that high ethical standards be enforced, but also that they are perceived as being enforced. The appearance of propriety, in other words, is very nearly as important as propriety itself, and to this end, an outside review might be preferable.

The second problem is the problem of expertise. A cardiologist would not treat a fractured toe nor a radiologist a detached retina, but virtually any physician is assumed competent to pass on ethical questions. This denial of the importance of ethical expertise may derive from a naive relativism, a quaint vestige of Jacksonian democracy, or a belief in the cult of the white coat, but in any case it is completely unrealistic. Committee members perhaps need not be professional ethicists, but they should at least be aware of the core ethical problems and approaches relating to their duties. Otherwise, we might find the ignorant permitting the unconcerned to deal with the uninformed. The recent efforts of Professor Stuart F. Spicker at the University of Connecticut Health Center to try to provide several weeks of intensive instruction and training for committee members represents a much needed and long overdue response to this problem, but thus far, he is almost alone in his efforts.

The third problem is the overly narrow construing of "experiment." One need not be a devotee of Holmes or Stevenson's airy rhetoric to notice that not all experimentation is labeled as such. In medical care facilities, in fact, as Ian Lawson, Medical Director of Hartford's Hebrew Home for the Aged has very perceptively observed, much of the most significant experimentation is actually administrative. That is to say, administrators, faced with a policy that treats certain classes of patients in certain ways, may for a variety of reasons decide to alter that policy. Perhaps, for instance, administrators seek to increase the rate of bed turnover by encouraging physicians to release patients earlier from the hospital than had heretofore been the general practice. When such a judgment is made and executed, it constitutes an experiment, although no one may recognize or name it as such. For the administrator implicitly is manipulating independent variables (like length of hospital stay) that conceivably might alter dependent variables (i.e., the patient's health) to a significant degree; the pre-existing situation constitutes the imperfect control. If the expenditure of fewer hospital resources does not

produce a less healthy patient than had the prior practice or if the expenditure of the same resources produces a healthier patient, the experiment is medically successful. Otherwise it is medically a failure. Inherent in the procedure is the assumption of certain risks on the part of the patient. Sometimes, when the risks are tied to procedures aimed at achieving better care, he may stand to benefit, too. But other times, where the risks are designed merely to enhance hospital efficiency, he is offered no direct benefit at all. A significant administrative decision, in short, may be as "experimental" as a formal laboratory study, and may raise many of the same considerations.

A number of difficulties, however, arise from the failure to acknowledge the experimental nature of administration. The Institutional Review Board is bypassed, so that moral questions are never really confronted in a systematic and critical fashion, nor are the patients informed of the risks they are running or required to consent to the new procedures. Follow up studies are frequently inadequate in terms of the gathering and analysis of pertinent medical data, so that observers often cannot confidently determine what the medical impact of the administrative change actually was. And the lack of critical medical-ethical scrutiny may reinforce the hard-pressed administrators' tendency to emphasize non-medical goals; administrators, increasingly preoccupied with economic concerns, may seek to maximize economic aims to the detriment of medical aims, and sometimes neither they nor anyone else need even be aware of it.

Obviously, administrators might object to terming many of their actions "experimental" and requiring ethics committee approval for them. It would be inconvenient and cumbersome, they might argue, and the last thing hospitals need is more red tape. Yet, it might be replied, it is curious, indeed, to review conventional medical experiments which typically affect only a small number of subjects and even then often in a rather minor fashion, while at the same time to ignore unacknowledged experiments that usually affect a far larger number of subjects, often in highly significant ways.

In none of these three problem areas—conflict of interest, lack of expertise, failure to treat certain administrative actions as experiments—is a clear and universally satisfactory answer apparent. Nor have I here one to offer. But it is at least obvious, I think, that the problems are worthy of our thought and attention, and that if the medical profession does not soon address itself to them in a sophisticated and meaningful way, others perhaps not so solicitous of the profession's interests will be most willing to assume the chore.

From Cathartics to Catharsis: Psychology's Emergence from Medicine

Norman J. Finkel, Ph.D.

Abstract—This paper, combining historical and thematic approaches, traces the theme of catharsis from seventeenth century medicine to twentieth century psychotherapy. By observing this constant theme and its varied practices across time and continent, the emergence of a psychological perspective becomes clear. But by looking backward, the time when medicine and psychology were one and the same—simply medicine—comes to the fore.

In historical hindsight, the classical period (the seventeenth and eighteenth centuries) represents the watermark of medicine's sovereignty over "psychiatric" conditions. As the great doctors, notably Sydenham¹ (known as the English Hippocrates), Willis,² and Whytt,³ increasingly confronted diseases of the mind and disorders of the passions, it was quite understandable that they would invoke a familiar conceptual frame of reference—the medical model—in order to make sense out of nonsense. For what they were treating was madness.⁴

Their patients presented symptoms and syndromes of remarkable variety: hysteria, hypochondriasis, mania, melancholia, nervous disease, and "common madness" were the most frequent. But these conditions were not new to the classical age. These conditions confronted shamans in Northern Siberia,⁵ Mestizo healers in Peru,⁶ Zar cults in Ethiopia,⁷ and Hippocrates in Greece.⁸ While the names of the syndromes differed with time and place, a constant theme lingered and united uncommon healers in a common bond. The idea, in its simplest form, was that a *corruption* had infested and was at the root of the disorder. The corollary, of course, was that cure necessitated *purging*—a *catharsis* of the corruption from the system.

What was different in the classical period was the medical flavor to the theme of corruption and purge. Unlike previous centuries and climates where the corruption was likely to be viewed as spiritual, and chiefly demonic, the classical age sought to uproot these disorders from the realm of spiritual sicknesses akin to heresy, and plant them among their true kind—

physical disorders. While this "medicalization" flourished in the seventeenth century, germination properly dates to Hippocrates. Zilboorg and Henry quote Hippocrates' insistence on a physical, rather than demonic, interpretation of the corruption: "They [referring to spiritual healers] use purifications and incantations and, it seems to me, make the divinity out to be most wicked and impious. . . . If you cut open the head, you will find the brain humid, full of sweat and smelling badly. And in this way you may see that it is not a god which injures the body, but disease (p. 44)." A spiritual explanation gives way to a corporeal explanation, as physical or chemical pathogen replaces demonic agents.

However, the legacy of early Greek medicine, the humoral theory for one, and the migratory womb for another, proved to be, by the eighteenth century, unparsimonious, unlikely, or simply wrong. As regarding the womb and its assumed "intimacy" with hysterical disorders, Willis⁹ was frankly skeptical. Writing in 1684, he discounts the womb as the cause of hysteria and places the blame elsewhere: ". . . And here, by the way, it is to be noted, that Women more than men, . . . , are sensible of the affections called hysterical, not so much by the default of their Womb, as for that they are of more weak constitution of Brain, and nervous stock; . . ." And the humoral theory also fared poorly. The four humors, black bile, yellow bile, blood, and phlegm, with their hypothesized balance or imbalance accounting for order or disorder respectively, no longer conceptually squared with the facts and medical knowledge of the classical age.

By the eighteenth century, the womb and humoral theories had become obsolete. But the theme of corruption and its need for catharsis lingered long after the theory that spawned it perished. Successors to the humoral theory came from Boerhaave at Leyden, and then Cullen at Edinburgh:¹⁰ these, for the most part, were a mixture of chemistry, mechanics, and metaphor. Doctors posed the following questions: was the system too acidic or alkaline?, were nerves too slack or taut, or was there too much energy in the system, or too little?

These eclectic systems, sometimes generated by little more than a simile or metaphor, were to come and go. However, men of medicine continued to prescribe emetics, cathartics, diuretics, diaphoretics, potions, seatons, and bloodletting, all in the name of purging.

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The techniques were clear, specific, and varied, the theme was simple and constant, but the theory was absent. Unique to the classical age was a paradox: physicians knew how to treat, but they didn't know what to treat. They could give specific (and varied) answers to the question, "How do you purge?" But the logically prior question, "What needs to be purged?", remained unanswered. What the classical age physician had not fully realized yet was his confounding of medicine with metaphor—the confusion of the physical with the psychological. In the eighteenth century, this was not psychology, but medicine; this was so not because psychology and medicine were indiscriminable, but because the former did not exist!

With exorcism, sucking, and trephening being purging procedures of previous ages and other places, Sydenham and Willis, among others, turned to emetics. The virtue of vomiting was that the pathogen could be ejected quickly, even violently, thus preserving the symbolic sense of overthrowing (throwing out) the enemy. The enemy seemed to be a confusion of disordered passions and phlegm. Salt of vitriol, flowers of antimony, and Crocus Metallorum were but a few of the common emetics used.

Cathartics also had advocates. In fact, what better, more natural orifice was there for eliminating a corruption? Its function was elimination, so the common purging potions just accelerated this normal activity which had somehow failed or slowed in its mission. The evacuation, in Sydenham's words, was "some vehement commotion of the mind," or some unruly passion, rather than physical matter.

The same could be said for the medicines to produce urinating (diuresis), sweating (hydrotick medicine), blisters, and blood. The pathogen from the blood was no longer black bile, but metaphorically rich words (e.g., "excess," "corruption," "morbid," "exalted," and "vivid"); words that conveyed a sense of *quality*, but without *substance*. This was the threshold of psychology, but the crossing was still several years away.

The emergence of psychology and psychiatry from medicine, or more properly, the awareness of psychology as distinct from medicine, begins with a curious man, Anton Mesmer, and a controversial practice, animal magnetism. The scene was Vienna, and then Paris, at the tail end of the eighteenth century. Mesmer had borrowed, amended, and employed a technique, first called mineral magnetism, then changed to animal magnetism (mesmerism), and ultimately called hypnosis, in the treatment of hysterical disorders. But controversies erupted about the man and the practice. Was he a charlatan? Did he plagiarize his dissertation? And so on. While making interesting history, the more important scientific questions hinged on the technique and its theory. How can a doctor, chiefly through

suggestive talk, come to produce changes in the physical disease? Stated another way, how can a non-physical treatment (psychology) alter the physical (the body)? This was a mind-body problem of the first order.

In the late eighteenth and early nineteenth centuries, two schools of thought arose, the animists and the fluidists, each with its own conceptualization of this process. The fluidists, starting with Mesmer and eventually championed by Charcot at Salpetriere, were opposed by the animists, led by Liebault and Bernheim at the Nancy school. The fluidists sought to explain hypnosis as a physical treatment. To do this, however, they hypothesized that certain questionable forces (e.g., planetary forces, nervous forces, magnetic and electric forces) had to exist; it was through the therapist's own forces, which he could control and direct, that he could physically influence the patient. But what did these forces act upon? Mesmer hypothesized a universal fluid that existed in all bodies, and which responded to the therapist's forces. Thus force to fluid changed body and then mind.

The animists, on the other hand, would have nothing to do with what they considered to be imaginary fluids; instead, they conceptualized the process to be a psychic phenomenon where the ideas of one person affected the ideas of another. The animists were eventually to win this battle, but victory was a long way off. Because of the controversy surrounding the man and his "medicine," the Academie des Sciences convened to investigate. The academie issued a condemnation of Mesmer and mesmerism, citing the lack of evidence for any such universal fluid. They went on to highlight the crucial role of suggestion in the procedure's effectiveness. The committee, made up of science and medicine's elite, could not have helped but be embarrassed by this finding: men of medicine and science were pointing to suggestion, to a *psychic* phenomenon, and granting it credence!

Janet¹¹ summarized the situation quite well in his following remarks:

"The victory of the animists was not well received, at least in the scientific world. They acknowledged it but deplored it. The doctrine of Charcot that it defeated was clear, definite, and easy to study; it seemed to bring animal magnetism within the limits of physiology, and that looked like scientific progress. What was it that the school of Nancy put in place of this fine dream? A few vague assertions on suggestibility and credulity that could not be discussed or understood without going into the new studies of psychology. But psychology, considered a confused mixture of literature and ethics, had no standing in the school of medicine. And,

indeed, it is a question whether psychology, as it was at that period, deserved to be more studied by physicians (p. 30)."

Following the historical trail of hypnosis, we come to Josef Breuer, to his patient, Anna O., and to his younger colleague, Sigmund Freud. What they conjointly evolved was a new meaning to catharsis.¹² What Anna O. called "chimney sweeping" was the catharsis of emotions, memories, and ideas. These psychological constructs were no longer peripheral or ancillary to the healing process, but its very essence.

As medicine entered the twentieth century, the animists' victory finally became clear—it was the emergence of psychological thought from its medical roots. The theme of catharsis endured, only the outpouring changed. Therapists of the twentieth century tried to promote a discharge of "strangled" emotions; these were feelings originally repressed, but if left unexpressed, would continue to fester. The train of associations led the patient and doctor inward, and downward, towards the depths of the unconscious. By unlocking the unconscious, lost memories and ideas saw the light of day. In their liberation, the person was set free of his disease. In historical hindsight, catharsis thus evolved from cathartics, and in the process, psychology was to emerge from medicine.

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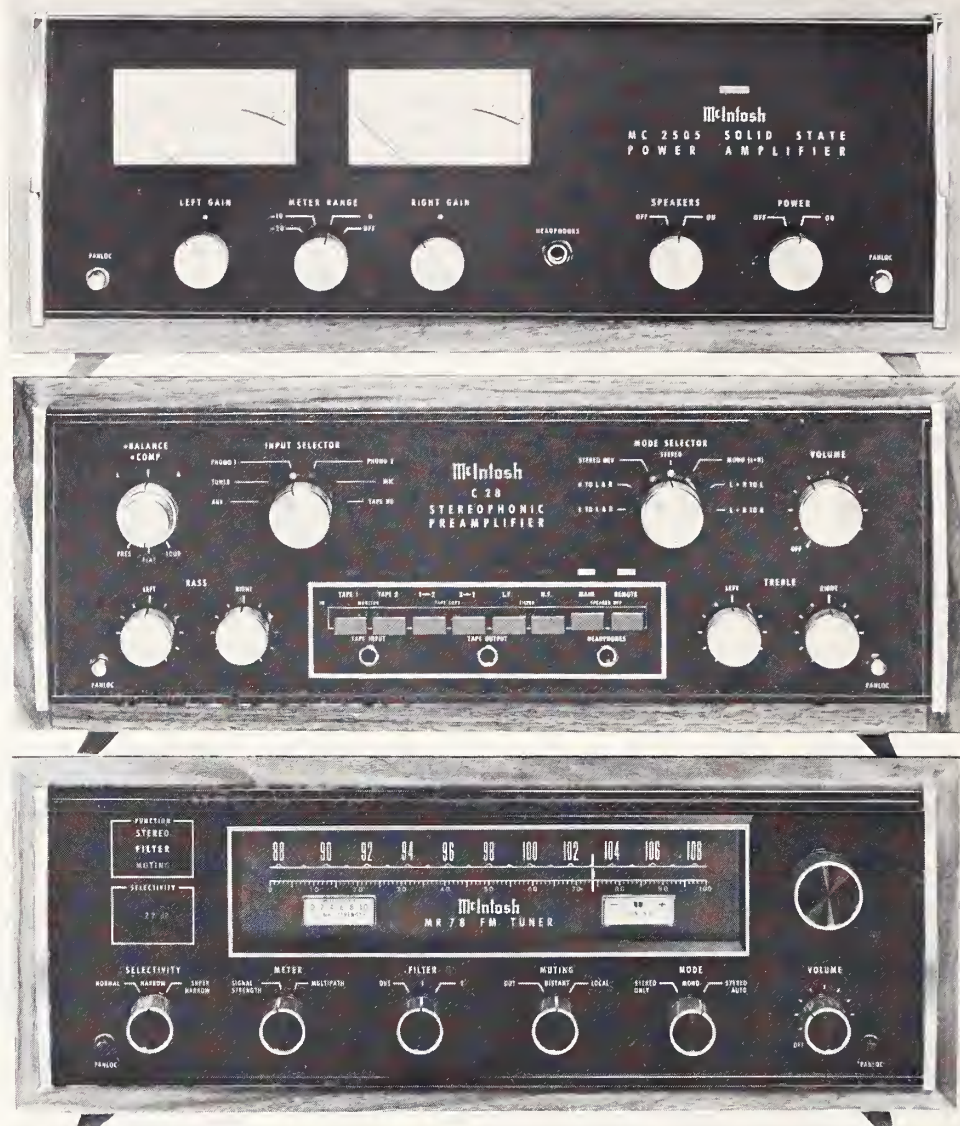
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This feasibility study was received and the following action taken:

1. That the AMA pursue efforts preliminary to securing a charter of incorporation for the establishment of a national reinsurance company;
2. That there be continued exploration of the total AMA commitment to a reinsurance facility;
3. That updated information be prepared for Board review at its next meeting, and
4. That an informational report be submitted to the AMA House of Delegates at the 1975 Annual Convention.

The study dealt primarily with the actuarial questions of the national reinsurance facility in combination with state medical society captive companies writing primary coverage.

Insurance Services Office (ISO), the national rating organization which collects statistics and publishes rates for companies that provide coverage to over 10,000 physicians across the United States, has indicated that its rates during the past decade have been approximately 50 percent deficient. ISO currently is estimating an annual trend in losses per physician of 23.5 percent since 1973, and will be filing for rate increases of up to 500 percent during the next few months. These rate changes will average 170 percent on a country-wide basis.

The Board believes that this huge rate increase will cause further outcry among physicians and is likely to cause added impetus to an examination of alternative approaches while pushing for modifications in the current social-political environment and will result in more state societies giving serious consideration to forming "captive" insurance companies. However, the establishment of captive companies alone cannot

realistically be expected to prevent continued increase in premiums.

These captive companies will be new, generally small, local and regional in nature and will enter an insurance market that has been traditionally unprofitable due to the deferred development patterns and the adverse judicial and economic trends.

The risk factor associated with these new ventures will be severe. The need for additional financial, actuarial and technical insurance support to help these companies survive will place new demands on the insurance industry. The state captive insurance companies would normally look to professional reinsurers to provide risk sharing, underwriting and capacity (volume or risk limit) support. Inasmuch as this segment of the insurance industry may be unwilling to effectively respond, the Board believes that it is the role of the AMA to arrange or provide this support.

The Board points out that professional reinsurers are "unwilling" because a method for establishing rates that are adequate to cover the losses as they develop over the years has not yet been evolved. Therefore, state captives and the AMA reinsurer would be subject to the same unknowns with the same loss potentials that have affected the commercial carriers and which have caused them to sustain losses in the hundreds of millions of dollars.

Over twenty proposals have been reviewed by the Task Force and its consultants. Among those reviewed were proposals which deal with the following concepts: reciprocal insurance exchange; mutual insurance mechanism; utilization of the trust concept; stock insurance company; national mutual with premiums based on gross income and not class rating; and savings fund mechanism. All of the above proposals deal with the AMA providing primary coverage directly to individual physicians—a concept which the consultants and the Board believe is not a viable option for the AMA.

The Board therefore has concluded that the only possible role for the AMA in the provision of professional liability insurance is in the reinsurance arena; that an AMA reinsurance company writing primary coverage would create an administrative nightmare in policy writings, claims review, legal defense, regional variation in state insurance laws, problem of adequate reserve and capitalization, logistics, financial risk, etc. The reinsurance mechanism was selected since it would provide the reinsurance coverage not currently available to those state medical society captive companies that will or plan to write primary coverage.

*Report of the AMA Board of Trustees,
House of Delegates, June 1975.*

The purpose of an AMA facility would be to attempt to provide additional financial capacity and insurance advisory support which might give the local captive increased operational stability, enabling it, in turn, to provide higher limits or to reduce its investment outlay. The AMA role would vary by size of state and by local situation. The staff of an AMA national reinsurance facility could also offer the local captive technical assistance and support.

An AMA national reinsurance facility would require the following initial captive, volume and spread if it is to operate on a sound financial and actuarial basis:

1. A minimum volume of 20,000 physicians;
2. A minimum of five states participating with a minimum of \$12 million in annual premiums;
3. AMA capitalization of \$1,500,000 to incorporate a national company in Illinois. (The capital required to support the minimums specified of \$4,000,000 using the standard regulatory ratio of 3 to 1 between premium volume and capital. The consultants recommend an initial working minimum of a little more than this, or \$6,500,000. The AMA capitalization of this amount would be obtained by the AMA contribution of \$2,000,000 to \$3,000,000, with the remainder provided by the user states. This would have to be increased as the average premium or the number of physicians increased.)
4. Exposure of the AMA reinsurance facility to the maximum of 10 percent of capital and surplus under single contract or policy occurrence limit. Under the example herein provided, the \$6,500,000 would provide the working maximum of \$500,000 per contract.

The following are alternatives in which the AMA national reinsurance facility could provide reinsurance support to state medical society captive companies writing primary coverage:

1. By increasing the state captives' capacity per policy from perhaps \$100/300,000 to \$200/600,000 or even \$250/750,000. In this instance, the AMA facility would be operating as an excess reinsurer on an 80 percent pass-through cost basis; or
2. Providing capital support by taking a pro-rata share of the primary \$100/300,000, such as 10 percent to 60 percent. This would allow the smaller state captives to operate on a more actuarially sound basis and within the regulatory capacity standards. If this occurs, it becomes a joint venture and the two insurers must work closely on all operational, financial and actuarial aspects; or

3. Involving the AMA as an aggregate stop-loss reinsurer. This involves the risk assumption from the primary carrier when cumulative losses incurred exceed some predetermined loss ratio, such as 110 percent. This provides coverage over the interval specified, subject to a maximum limit. The entry point or level at which AMA reinsurance would take effect must be well in excess of expected loss range, which is difficult to predict, otherwise the risk assumed approaches that of the primary local captive. The ability of the AMA national reinsurer to provide sufficient support to local captives due to the 10 percent rule would have to be determined by the appropriate regulatory authorities. The maximum limit it could offer could be insufficient to meet the needs of large states (10 percent of New York premium is \$7,000,000).

The proposed eligibility requirements for AMA national reinsurance facility acceptance of state captives are:

1. Initial capital—at least \$3,000,000 for a small captive of a minimum enrollment of 3,000-5,000 physicians. This should increase at a ratio of 3 dollars of annual premiums to every 1 dollar of capital. The application of the 10 percent risk limit would permit the writing of only \$100/300,000 before reinsurance.
2. Volume, spread (geographical and by class) and percent of participation, subject to a minimum number of 3,000-5,000 insured physicians depending on history of claims frequency and volatility. The minimum annual premium for \$100/300,000 limits should not be less than \$6,000,000.
3. Independent actuarial reviews of the rate level, the rate differentials by class and territory, and the rate trending program. The use of a reserve premium fund of up to 25 percent of premium would be encouraged, particularly for small local captives.

The following are operational guidelines for AMA national reinsurance facility. The following general outline provides some of the major administrative concerns and AMA performance standards:

1. Establishment of state eligibility criteria;
2. Condition of coverage;
3. Risk control management;
4. Claim review and legal service;
5. Association support;
6. Local social-political environment including control over existing abuses through changes in the tort system. Acceptance by the AMA

reinsurance facility of the state captive would be contingent on the state's ability to effect mutually agreed upon changes in the tort system within that state to insure a long range improvement in the underwriting climate;

7. Monitoring and control by AMA reinsurer;
8. Where applicable, limited management participation by AMA reinsurer; and
9. Approval by local regulatory authorities.

The consultants have recommended that states be grouped into four basic categories for the writing of reinsurance and the Board concurs in that recommendation:

GROUP A

States with less than 3,000 physicians must group with other states to meet minimum enrollment for an individual captive of from 3,000-5,000 physicians.

Group A captives would require national reinsurer involvement on a large scale; additional capacity and technical assistance will be critical. The situation will require a state grouping to obtain the minimum specified earlier. The national reinsurer, subject to the conditions covered earlier, might offer to reinsure 60 percent of the primary \$100/300,000 on a pro-rata basis. It could also offer an excess layer of \$100/300,000 (total \$200/600,000) on an 80 percent basis. In this example, the national reinsurer would be receiving over 50 percent of the premium and would be a full partner.

GROUP B

States with 3,000 to 5,000 physicians. (Minimum enrollment of 3,000-5,000 is required for a state to set up its own captive.)

The national reinsurer would be principally an excess reinsurer, and would take a smaller pro-rata portion of the primary.

GROUP C

States with over 5,000 physicians, excluding New York and California. These states must still have minimum enrollment of 3,000-5,000.

The same evolution would occur but to a greater degree. The national reinsurer could be an excess or aggregate stop-loss reinsurer and/or take a small share of the primary.

GROUP D

New York and perhaps California.

The arrangement would be negotiated and would benefit the local physicians while increasing the stability of the AMA pool without straining its financial capacity to serve several other states.

Domicile, Corporate Structure and Operational Plan

The Board reports that it would be feasible to incorporate a company in Illinois quickly and at a relatively low cost. The required reinsurance capital would not have to be deposited until the decision is made to commence insurance operations. The benefit of lesser capital and surplus requirements of Colorado or Bermuda are of illusory value, since the capital required to provide financial support and to be treated as an "approved," not admitted, reinsurer outside of Illinois is well above these minimums.

In order for the AMA to control the national reinsurer, a stock form of organization would seem appropriate, even though income tax advantage may be lost.

The participating state captives could buy either stock or subordinate debentures to enable the national reinsurer to maintain a satisfactory ratio between premium volume and capital and surplus. This additional capital could be returned at a later date if financial conditions permit.

If the AMA reinsurance facility is implemented, it is estimated that the administration of the AMA national reinsurance facility based on the minimum requirements for the establishment of such a program would require approximately 5 percent of the \$12,000,000 premium, or \$600,000.

. . . the value of experience is not in seeing much but in seeing wisely.

William Osler, M.D.

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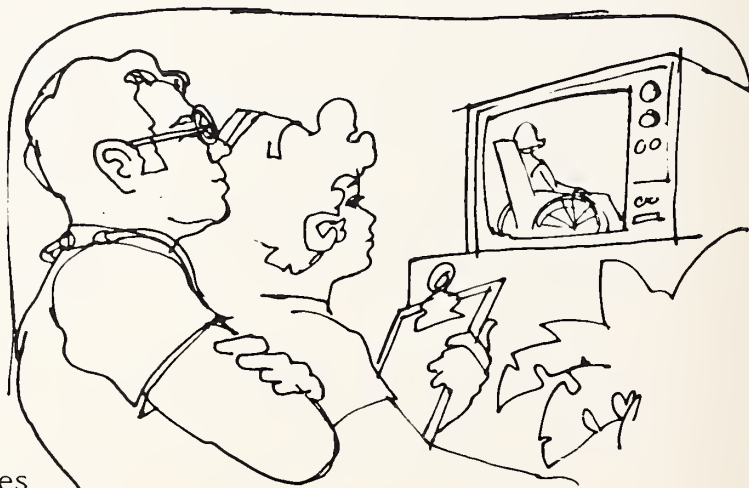
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Month in Washington

Opposition to the Administration's proposals to change Medicare appears to be almost universal on Capitol Hill. The American Medical Association, the American Hospital Association, the AFL-CIO, the National Council of Senior Citizens are among many frequently crossed organizations that have joined in assailing the President's proposal.

The Administration has asked Congress to approve a new catastrophic benefit for Medicare coupled with much higher cost-sharing, to impose percentage "caps" on Medicare reimbursement for hospitals and physicians, and to change Medicaid into a block grant program for the states.

The House Ways and Means Health Subcommittee, headed by Rep. Dan Rostenkowski (D-Ill.), chaired three days of hearings as the Ford proposal was intended to take effect in March and Congressional approval was necessary. Any illusions the Administration may have entertained that some important support might surface for the Medicare plan were swiftly dispelled by the parade of hostile witnesses.

Rostenkowski chided the Administration for seeking early enactment without being able to provide Congress with a legislative proposal by the time hearings started. From the tone of Rostenkowski and other Subcommittee members in their questioning, there seems little chance of the proposal getting anywhere.

Raymond T. Holden, MD, Chairman of the AMA's Board of Trustees, said "The proposed changes would not only be impractical, but would also be inherently unfair to all parties concerned. Unfortunately, the unfairness would be especially hard upon the beneficiaries of the Medicare program."

Discussing the proposed four percent limitation in 1977 on increases in Medicare physician reimbursement, Dr. Holden said "We must point out unequivocally that the percentages proposed are wholly unrealistic. The proposal ignores the realities occurring in our economy throughout the country. Moreover, inflationary conditions existing generally in our economy cannot justifiably be the basis for imposition of arbitrary and discriminatory ceilings on a single segment of the economy.

"To impose such arbitrary limits on only one segment of the economy and then to expect a continuation of beneficiary satisfaction for having benefits paid by Medicare (as promised by the program) is naive. The health care sector of our society cannot operate in a vacuum. It is subject to the same costs of living and costs of doing business as is any other segment of society. It cannot be expected to provide high quality care while having reimbursement limited to unrealistic levels."

The AMA Chairman told the Subcommittee the proposed limitations on increases in charges are in reality a response to a problem created in large measure by government itself. "Providers and physicians cannot be subject to ever increasing regulations and requirements . . . and yet be expected to keep charges at less than cost levels. These special requirements are on top of the inflationary problems faced by them along with everyone else."

Dr. Holden noted that both physicians and hospitals also "are experiencing highly unusual expenses relative to professional liability insurance."

"If the limitations were imposed, some health facilities could face bankruptcy," Dr. Holden said. "The patient will

pay more, and the federal government will again have promised a broad program while seeking to limit payment for the care received. Under the guise of holding down costs to the federal government, the costs would, in fact, be increased to patients. The federal government must realize that once a program is legislated the service does not become free. But that, as with services generally, payment must be provided. In this instance we believe that it is unconscionable on the part of the Administration to shift costs to the beneficiary under the pretense of trying to limit the costs of the program to the federal government."

The proposals creating the four and seven percent (on hospitals) limitations "are clearly discriminatory and arbitrary," he said. "They should be rejected summarily. Physicians have already been subjected to unreasonable and arbitrary controls. First the 83rd percentile formula, then the various phases under price controls, and now the 75th percentile which itself is controlled by an arbitrary economic index.

"These inequities are further magnified by the unrealistic Medicare practice which bases current payments upon data almost two years old. While physicians have accepted their responsibility in meeting the needs of the elderly, it is time for the government to meet its responsibility of fulfilling the commitment it made to the elderly under Medicare."

Bert Seidman, Director of the AFL-CIO's Social Security Department, said Labor was "dismayed" by the Administration's recommendations, which he declared would "create a most serious barrier to health care for the elderly." Seidman argued that the proposed reimbursement controls on hospitals and physicians would simply shift the financial load to non-Medicare patients in hospitals and result in fewer physicians accepting assignment.

The sounds of a catastrophic-only national health insurance plan for this year still reverberate through Senate halls.

Senate Majority Leader Mike Mansfield (Mont.) and Republican Leader Hugh Scott (Pa.) recently agreed during a joint television appearance on backing catastrophic and on predicting it has a good chance of clearing Congress this year.

Chief Congressional sponsor of a catastrophic-oriented plan—Sen. Russell Long (D-La.)—said in a separate appearance that he believes Congress will approve his bill this session. Congress will go beyond what President Ford recommended in the way of catastrophic benefits for Medicare beneficiaries, Long said, and extend the concept to all Americans. The Chairman of the Senate Finance Committee said that for the average working man with a long siege of illness and very high medical expenses "we are going to provide some help for him, too."

The Administration has told Congress it won't propose a national health insurance (NHI) program until the economy brightens. However, Health, Education and Welfare Secretary David Mathews has conceded the plan—when submitted—will be close to the Nixon Administration's so-called CHIP plan mandating comprehensive private health insurance coverage to be offered by employers.

Mathews appeared before the House Commerce Subcommittee on Health as it opened the 1976 hearings on NHI. Under questioning from Subcommittee Chairman Paul Rogers (D-Fla.) Mathews said CHIP remains the basic Adminis-

tration NHI plan and that proposing it "is a matter of timing."

A Senate report charges that some clinical laboratories involved in Medicaid have operated on a kickback basis with physicians and clinics.

Chairman Frank Moss (D-Utah) of the Senate Special Committee on Aging said the report "concludes that, at least in the states which came under investigation, kickbacks are widespread among labs specializing in Medicaid business. In fact, it appears necessary to give a kickback to secure the business of physicians or clinics who specialize in the treatment of welfare patients."

The report focused on Illinois. Other states mentioned were New York, New Jersey, Michigan, California and Pennsylvania.

A staff witness told the Committee at a hearing that the staff estimates that at least \$45 million of the \$213 million Medicare-Medicaid payments to clinical laboratories is either fraudulent or unnecessary. Average kickback was 30 percent of the lab's charge, the report estimated.

The report says a small number of labs control the Medicaid business in the involved states. In New York, according to the report, 17 facilities control 70 percent of the Medicaid business; in New Jersey, 12 labs control nearly 60 percent of Medicaid payments; in Illinois, 26 labs handle over 90 percent of the volume.

In response to numerous press queries generated by the Committee's report including a filmed version of the charges carried nationally by CBS's program "Sixty Minutes," Max H. Parrott, MD, AMA President, made the following statement:

"I would remind physicians and the public alike that the AMA code of Ethics is very clear on the matter of laboratory charges.

The physician's ethical responsibility is to provide his patients with high quality services. As a professional man, the physician is entitled to fair compensation for his services. But he is not engaged in a commercial enterprise and he should not make a markup, commission or profit on the services rendered by others.

If after due process a physician is found to have violated the Code of Ethics in this or any other respect, he is fully liable for whatever professional penalties may be imposed, in addition to whatever penalties may be imposed by law."

Staff of the House Commerce Health Subcommittee has prepared a discursive dictionary designed to steer lawmakers through the maze of terms—medical, legal, and federal—involved in an intelligent discussion of national health insurance.

The 183-page document also will help physicians who have dealings with the federal government and Congress. It contains concise definitions of most of the pertinent legal and governmental terms and acronyms ("alphabet soup expanded") flavored with a touch of whimsy.

Illustrations range from a drawing of the lower intestines (see borborygmus) to a handsome full-page sketch of andreas vesalius and a two-page biography ("a wonderful man").

The Health, Education and Welfare Department has been accused of attempting a shocking invasion of privacy in proposing to collect social security number identification of hospitalized patients and their physicians.

The AMA told HEW that "In this age of great concern over the right of privacy on the part of all citizens in our country, we are shocked that a federal department would now formally propose to establish a mechanism by which most physicians and every hospitalized Medicare, Medicaid, and Title V recipient could be classified, identified, matched, compared, reviewed and computerized with the impersonal ease of electronic machines."

The social security information would be part of the data collected by the Dept. for Uniform Hospital Discharge Abstract (UHDA) for federal medical programs. Purpose is to gather and coordinate statistical information which also could be used by planning bodies, accrediting organizations, hospitals, and private third-party payors.

The form would require the names of patient and attending physician and operating physician as well as their social security numbers.

The AMA noted in a formal comment that such use of social security numbers as universal identifiers has been criticized both by Congress and HEW in the past as a significant threat to people's right of privacy.

"There is well founded reason to fear that universal identifiers might be potentially available for abuse," the AMA said. "If, for example, each individual is identified in all of his activities by a single number and his activities are tabulated in a number of different record systems, all computerized, the universal identifier tends to erode the barriers between information systems. The fact that the social security number is already in such wide use makes any further encouragement for its use as contemplated by the proposed UHDA, highly dangerous."

In an introduction, Subcommittee Chairman Paul Rogers (D-Fla.) said the developing debate on NHI ("a term not yet defined in the United States") employs a "bewildering array of new and unfamiliar terms." He described the discursive dictionary as "the first reasonably complete dictionary of terms relevant to the consideration of NHI and health care available."

Skipping through the document one finds definitions of such terms as triage, trolley car policy (benefit for injuries only when hit by a trolley car), slip law, respondeat superior (employers liability for malpractice of an employee), ping-ponging (passing patients from one physician to another), halo effect, gork, chainside and backdoor authority.

A typical definition—legislative history:

The written record of the writing of an act of Congress. It may be used in writing rules or by courts in interpreting the law to ascertain or detail the intent of the Congress if the act is ambiguous or lacking in detail. The legislative history is listed in the slip law (final version) and consists of the House, Senate and conference reports (if any), and the House and Senate floor debates on the law. The history, particularly the committee reports, often contains the only available complete explanation of the meaning and intent of the law.

Put together by Lee Hyde, MD, professional staff member of the Commerce Health Subcommittee, the dictionary is available in limited quantities on written request to: (Please enclose a self-addressed envelope)

Interstate and Foreign Commerce Committee
2125 Rayburn House Office Building
Washington, DC 20515

The Shortcomings of “Claims-Made” Professional Liability Insurance

St. Paul Companies have announced their intention to write all new or renewed professional liability contracts on a “claims-made” basis. There are serious shortcomings in this approach.

Most medical liability insurance presently being sold is under a “loss-incurred” policy contract. Under this contract, the carrier agrees for each policy year, to provide legal defense and to pay awards and settlements (up to the policy coverage limits) for any claim arising out of an incident, which occurred during the policy year, regardless of when in the future the claim is made.

Since most of the claims arising out of a particular policy year are not identified until the end of the fifth year or later, it will be readily seen that “loss-incurred” policy offers important protection.

The “claims-made” contract provides for each policy year, legal defense and payment of awards or settlements (up to policy coverage limits) for those claims identified during the policy year and which did not arise out of incidents which occurred prior to the beginning of the first policy year of such coverage. If the physician previously had “loss-incurred” coverage, claims would be covered up until the time he took the “claims-made” coverage.

In other words, the “claims-made” contract will cover any claims against the physician during the policy year. As long as the physician keeps the “claims-made” policy in force, he is protected against all claims. However, if he moves out of the state, becomes disabled, retires or otherwise interrupts his practice, he will be forced to continue carrying coverage when he is not working and during a period in which he may have little or no income.

As an illustration of this, let us assume that Doctor Jones is carrying “claims-made” coverage and at age 70, decides to retire. If, because of his reduced income, he drops his “claims-made” coverage and then has a claim filed against him on an incident that might have occurred one, two or more years before his retirement, he is left unprotected against financial ruin. To prevent this, Doctor Jones, despite the fact that he is retired will be forced to continuing carrying “claims-made” coverage forever or if he can get it, “loss-incurred” coverage to protect him during the years he had “claims-made” coverage prior to his retirement.

It is understood, at least in the case of the St. Paul Companies, physicians will be guaranteed an oppor-

tunity of purchasing “extended” coverage when the “claims-made” protection is terminated. However, most industry observers see a greatly increased premium for such coverage—and this would come at a time when a physician’s income is greatly reduced.

In short, there are only severe disadvantages for the physician who accepts a “claims-made” policy contract. The advantages are with the insurance carrier; this type of contract enables them to more accurately estimate costs since they need only forecast for one year.

One of the inducements for accepting “claims-made” coverage could well be the relatively low premium rate during the first year. This is because any claim during that first year would be covered by the “loss-incurred” policy which was in force the year before the writing of the new “claims-made” policy.

In summary, here are some of the more important shortcomings of the “claims-made” policy contract:

1. The physician would tend to become the captive of the insurance company, since he could not change companies without buying extended coverage for future claims which might arise out of prior incidences during the “claims-made” coverage.
2. If a physician did not buy “extended” coverage when he changed companies, retired, dies, or was denied renewal by the company, he would be exposed to a continued and undeterminable risk and financial loss for himself and his family.
3. If a physician is able to buy “extended” coverage when his “claims-made” coverage is terminated for whatever reason, that “extended” insurance coverage is likely to be very expensive. This is because the premiums would be based on the forecast of awards and expenses which might arise from incidents which occurred during the years of “claims-made” coverage.
4. Should the physician be unable to obtain or afford “extended” coverage, he would be required to continue “claims-made” coverage from year to year after his retirement and his estate might have to continue the coverage for many years after his death.

Finally, “claims-made” coverage for medical professional liability is, of course, better than no coverage, but “loss-incurred” coverage continued to be preferable, despite possible differences in cost.



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Calcium Pantothenate	2.5 mg.
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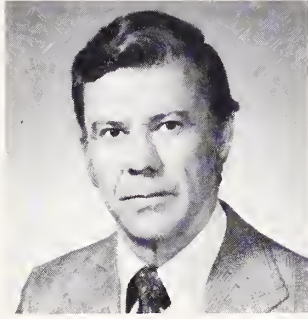
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President's Page



Recent doctor strikes are vivid evidence of the growing militancy of physicians. While the malpractice cost crisis was a precipitating factor, it was, after all, only the final straw in the deteriorating medical scene—merely further evidence of the widespread bitterness and anger with the escalating bureaucratic intervention in all areas of medicine. As a result of the physician unrest, the call for unionization is increasingly heard wherever physicians congregate. Even one committed to an activist posture and aggressive responses should pause to consider the consequences. This solution, which is growing more popular daily, promises not only to contradict our humanistic heritage of public service but also promises to freeze the innovative and progressive nature of our profession. This action will only exaggerate the present dissension and division in our ranks.

A union, to be successful, should be composed of a small, closely knit group with sharply defined goals. It should agitate against a well known but unpopular, affluent adversary. The public should be unconcerned, and preferably unaffected. How can medicine qualify? We are a diverse heterogeneous group of adults with different needs, goals, and life styles. Many colleagues have much closer ties with their own specialty groups than with local, county, or state organizations. The number of physicians in medical schools, public health organizations, and the military has never correlated well with their interest in organized medicine. Many more factors tend to divide than unite us. Unionization would result in many more splinter groups than we see at present and would inevitably make our differences permanent.

Not only does this form of industrial collectivism offend many members as unethical and even immoral but it is self-defeating. We would soon lose our identity as an unique institution. Predictably doctors would have to join with other health care professionals in order to form a national bargaining agency that would be recognized by the Secretary of Health, Education and Welfare. What we need is unification, not unionization—a consolidation of purpose, organization, and course of action.

Strikes and job actions are counterproductive. The adversary stance present between physician and patient, now being fueled by the media and malpractice, would be heightened. Does anyone truly believe that a call for a nationwide strike would accomplish our goals or be supported by the majority of physicians? Possibly, but only as a final, desperate measure. The so-called victories, which are proclaimed as proof of success for this kind of activity, would bring a reminiscent smile to the face of King Pyrrhus.

Physician apathy and resistance to organized medicine, especially the American Medical Association, is legendary. The biased myths that were programmed into students during medical school die slowly but they are dying. Even the most virulent physician critic of the AMA has to appreciate and applaud the recent accomplishments protecting doctor rights and prerogatives in patient care. This body is the most democratic and least parochial of our physician groups and the only one which attempts to represent all practitioners. It is the only physician organization that is recognized and respected by the federal agencies and the other health care organizations as both a worthy adversary and credible ally. The AMA must remain our primary spokesman in Washington.

Medicine has been politicized. Since politics can be defined as the art of appeasing one's constituents, the situation will only get worse. We are presently locked in a power struggle for control of the medical commons. Only the AMA has the skill, experience, and organization to exert the necessary political and legal pressure to lead us in the days to come. Only power stops power!

Guy W. Van Syckle, M.D.
President

Reflections from the Dean's Office

Robert U. Massey, M.D.

Early each year, sometime after the mid-winter festivals, the legislative machinery begins its time of frenetic activity which always means that some rules will change for all of us. Whether as physicians, educators, administrators, taxpayers, or patients, our world in July is certain to be different from our world in January. During that spring term of relative instability, there is a fleeting opportunity, often more illusory than real, for all the systems to respond ever so little to the pushes, pokes, kicks, and shouts of the active constituencies.

For university officials this is a troubled time, for the future of their institutions is more and more being determined in the corridors of the capitols and the halls of the assemblies; and the academic and political processes seem to become hopelessly confused in the hearing rooms.

University faculty members for the most part try to come to their conclusions about educational policy, curriculum, teaching methods, and research directions through reason and by considerations of human values. They like to believe that the principles guiding their choices have to do with truth, goodness and beauty. This sounds naive, but I believe that, under all the busyness of the modern university, faith in the high value of the examined life remains, and the guides of reason, ethics, and aesthetics prevail.

In other institutions, decisions are made for other reasons. Of course, they are made for other reasons in the university as well. The market place has laws which events mostly follow unconsciously. The economy may be consciously manipulated, but its laws, like the laws of nature, cannot be denied. We may decide to favor or resist the natural workings of the market, and be under no compulsion to consider the good, the true, or the beautiful.

Decisions are also made to maintain an opinion, a man, or a party in power; to curry the favor of some constituency whose numbers, money, or influence may be momentarily important. Political decisions may be made for no other reason than to please, to

avoid giving offense, or to pay a debt. They may be, from all other points of view, irrational.

The university has always to deal with the world of commerce and politics. Like the medieval church before it, it must be successful in the world but must avoid being controlled by it. To be in the world, but not of it, is an especially difficult feat for the academic administrator who, unaided by grace, has no special talent for sanctity. The temptations of power and money are not always easily resisted.

And yet, when appropriations are being voted, political considerations determine the main direction of those decisions. The market enters in, and the concerns of the educator may be set aside as too impractical or convoluted for legislative purposes, or are viewed suspiciously as being vaguely subversive. Sometimes, the academic viewpoint is embraced. Almost always that is a cover for intense politicking and the academician should be wary. Whenever the court rides down to Oxford, the cost to the university may be high. The distinction between cooperation and prostitution is a fine one, but must finally be made.

Medical schools are under pressures now to meet the demands of society as those demands are interpreted by political leaders. Costs, quality, availability, accountability are matters which will not go away. As physicians and medical educators, we must respond to our political masters, because they make the laws, and control much of the market. Their decisions are usually political and sometimes economic, based often upon necessarily fragmentary knowledge, perceived public demand, and the need to retain power. If we understand why they are deciding as they are, it would make it easier for us to sort out motives, our own and theirs, and to assist the legislative process.

We need to work with that decision making while defending the values of the university, the primacy of science, and the professionalism of our work. The great danger of democracy is that freedoms topple before populist pressures. Our freedoms require that we distinguish public good from public opinion; the professions and the university can help to make those distinctions.

ROBERT U. MASSEY, M.D., Dean and Professor of Medicine, University of Connecticut School of Medicine, Farmington.

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EDITORIALS

Why Should I Join the AMA?

I believe the answer to this question will depend upon the answers to two simple questions and another that is more difficult.

The first one is this: Do you anticipate that there will be any changes in the medical system in the United States within the next few years? It is hard for me to answer this in any way except to say there certainly will be, they will be dramatic and unsettling. It must be expected that such changes will impinge upon what I consider to be my own personal rights and those of my patients.

The second question is: If a physician wishes to protect himself against such unhappy developments, can he do it best by his own individual work or by a group effort? Here again there can be little argument. It still is true that united we stand, divided we fall.

This brings us to the third question which is indeed more difficult to consider. It is: If one wishes to join and vigorously support some organization, which one should it be? Certainly to achieve any success the organization must be effective and have plenty of clout. On the national scene there are not many that would qualify. The AMA, the National Specialty Societies, The American Association of Medical Colleges, and some organizations that approach or are actual unions offer the possibility of effective action.

Present trends would indicate that there are only two of these major organizations that will be foremost. They are the AMA or a physicians' union.

Insofar as unions are concerned the political climate of the country at the present time is such that organization into tight groups that are concerned first and foremost with the welfare of their members is popular. Even supreme court judges have had to press

collectively for an increase in salaries. The profession of teaching has been thoroughly unionized. The success of labor unions in attaining their objectives insofar as higher salaries are concerned undoubtedly influences many physicians.

The power of the union lies in its single-minded devotedness to the welfare of its members. If there is any public responsibility included in these efforts it certainly has not been obvious in the action of unions in the recent years. The only weapon of the union is the strike. This method is abhorrent to many doctors and all physicians would agree that it is not in the best interest of the public and should be used only under the most serious circumstances.

The AMA similarly has been criticized by some who say that it is too interested in doctors' welfare and is uninterested in the public. To me this is absurd. Obviously there is nothing wrong with promoting a doctor's welfare, for who else will do it? On the other hand, what organization has contributed the millions of dollars to education that has been given by the AMA for so many years? What organization has supported so many scientific journals and continues to support them despite rigorous financial problems? What other organization has kept physicians so well informed about all aspects of medicine? What other organization particularly through the aid of the Women's Auxiliary has contributed such enormous sums to the education of medical students? The list of these functions that I personally wish to support could go on and on; they are provided by the AMA but not by unions.

It must be recognized that the road ahead is long and perilous. Independence of the medical profession will continue to be eroded seriously in the future. To maintain any semblance of independence a strong organization that can speak for the welfare of the doctor but which bears strong responsibility toward

the public, that supports education, and supports science is the organization that we as individual physicians should join.

No one would agree with every action of the AMA; I do not myself. However, the members of the House of Delegates and the Trustees are intelligent persons, seriously dedicated to their responsibilities. If I personally can't convince the AMA to change its ways, there is a good chance that its collective wisdom in the long run, can prove to be the wiser course to follow.

If you agree with this point of view, join the AMA.

Claude E. Welch, M.D.

*Clinical Professor of Surgery, Harvard Medical School
Immediate Past President, American College of Surgeons.*

Humanistic Studies in Medicine

A Call for Inter-Professional Cooperation

The relationship between medicine and the humanities—law, philosophy, theology, history—has not always been characterized by harmony and mutual respect. Quite frequently, an unhealthy antagonism between professionals from these disciplines and persons who practice medicine has discouraged a multidisciplinary approach to problems of mutual concern. This antagonism has many sources. Some who practice medicine resent the criticisms of those who watch medicine from an academic distance. Many philosophers and lawyers object to apparent violations of the rights of patients by insensitive physicians. Physicians, in turn, are angered by the intrusion of government regulation of their practice of medicine and the increasing crisis in medical malpractice. Examples of such sources of antagonism abound and should be a cause of concern to us all. For in the end, the person who suffers most from our rejection of inter-professional cooperation and our retreat into professional isolation is the person we are all committed to serve—the patient.

The practice of medicine in the modern world is an extremely complex endeavor. It involves not only scientific parameters but also philosophical, ethical, and legal ones as well. The philosopher of medicine offers clarification as we try to understand what medicine is and how it relates to our goals as individuals and as a society. The medical ethicist has much to contribute to our understanding of how to protect human values and human rights in the pursuit of improved health. The lawyer can contribute to our appreciation of the regulation of the health-care process in the name of encouraging the health and safety of the patient as an individual and of society as a whole. The historian of medicine lends depth and perspective to our understanding of what medicine has been able to achieve and

the influence of societal events upon medical progress. The physician remains the primary focus of our health-care system and gives substance to what would otherwise be theoretical and abstract musings of the other professionals. A perfect example of the need for cooperation and the benefits which result can be found in the complex issue of human experimentation.

Clinical investigation is an essential means of gaining scientific information and of contributing to progress in medicine. Until relatively recently, physicians in the Hippocratic tradition have functioned as researchers without widespread regulation. It was assumed that the physician/scientist must be allowed the freedom to develop new concepts and approaches. It was also assumed that the physician/scientist was committed to the ethical acquisition and use of scientific knowledge and stood as the protector of the rights and safety of the subject-participants. However, in the years following World War II, the deficiencies of a loosely-regulated system were made clear by a series of well-publicized abuses of the subjects of human experimentation. The Nazi "experiments" upon prisoners during World War II, the Tuskegee Syphilis Study, and the Jewish Chronic Disease Hospital Study have attracted international and national attention. During the past ten years, the Department of Health, Education and Welfare has developed a comprehensive policy of protection for persons who are the subjects of experimental research. The tensions such regulations present involve society's need to acquire knowledge which can only be obtained by using human subjects without sacrificing their rights or safety. The key mechanism in the Health, Education, and Welfare system of regulation is the Institutional Review Board which evaluates the use of human subjects in experimental protocols on an institutional level. A limiting drawback to the ability of these Boards to function effectively is the absence of training in the legal, ethical, and scientific design of research for those who review research. The opportunity for multi-disciplinary cooperation is substantial in this area.

The Humanistic Studies in Medicine section of the Department of Community Medicine and Health Care at the University of Connecticut School of Medicine had just completed a grant proposal to develop educational programs to educate persons serving on Institutional Review Boards. This represents one example of our intention to promote inter-professional cooperation in approaching problems in medicine. During the past two years a series of monthly forums on "Human Values in Health Care" have been presented at the University of Connecticut Health Center, through the support of the Connecticut Humanities Council. The importance of inter-professional dialogue has been recognized by Dr. J. Alfred Fabro, the Editor of *Con-*

necticut Medicine, The Journal of the Connecticut State Medical Society. Many of the papers presented at these forums have been published in *Connecticut Medicine*. In the near future, a special series, *Humanistic Studies in Medicine*, will begin with "Madness, Committal and Society" by Dr. Michael Peszke of the University of Connecticut, Department of Psychiatry. The submission of papers dealing with humanistic issues in medicine by members of the Connecticut State Medical Society is heartily encouraged.

We stand ready to contribute in any way we can to the development and continuation of dialogue in these important areas.

Joseph M. Healey, Jr., J.D. Stuart F. Spicker, Ph.D.
Assistant Professor *Associate Professor*

*Department of Community Medicine and Health Care,
University of Connecticut School of Medicine*

Medical Politics for All

Our ideas must constantly be altered to keep pace with changing times. Of prime importance is a modification concerning the physician's concept of and attitude toward medical politics. You must recall how, while internes and residents, we looked with scorn from our lofty academic heights upon "the art of adjusting and ordering relationships between individuals and groups in a political community!" Our interest was solely in pursuing the science of medicine. Then even after we learned that the art of medicine was also of great merit and importance, we still held scarcely above contempt those who combined the practice of the healing art with "matters dealing with the regulation and control of men living in society." Is it mere coincidence that both the above quotations are definitions of politics taken verbatim from Webster's dictionary?

No longer do we have any choice concerning participating or remaining on the sidelines. We are reaping the harvest of generations of preoccupation with medical science and the neglect of medical "politics" as defined above. We have permitted others to make all the decisions concerning the relationship of the physician with his or her community, state and nation. We cannot work in our ivory towers and remain aloof from the responsibility of each of us that the entire medical profession be deeply concerned over the conduct of each and every physician. How quickly the media indict all physicians for the misconduct of a few! Only our concerted efforts as an organized group, only the political interest of all physicians and not just of a dedicated

few, only the devoted support of each of us behind every striving by organized medicine to elevate ethical standards and maintain a high level of integrity, will turn aside the inexorable drive of those who seek the ultimate federalization (not merely socialization) of all medical practice.

Dissident Soviet physicist Sakarov has cautioned that America must not lose the patient-physician relationship which has made our system of medical care superior to that of any nation employing a federalized system. Incident reports of problems in some of these latter nations have been appearing more frequently in the medical press. Indoctrination in the superiority of the American system must begin at the medical school level. This is where the foundations for a medical political conscience must be laid. Energies which students and new physicians have directed toward association for other concerted actions should at least in part be channeled toward political efforts to thwart the detractors of our person-to-person system of the delivery of medical care.

We must realize before it is too late that our own abdication of responsibility for medical politics is a major reason for the plight which has allowed third parties to dictate our course of action. We must either be true leaders or we shall have no choice but to follow.

Merrill B. Rubinow, M.D.

Lifelong Continuing Medical Education

One of the priorities facing our profession is lifelong, continuing medical education. It is to be voted on as a condition of membership in the State Society at our annual meeting this month. I wish members could have heard the discussion on CME at a recent, stimulating conference I attended. Sponsored by the Miller and Fink Corporation of Darien, CT, publisher of the excellent journal, *Private Practice*, the group is named the Alliance for Continuing Medical Education. The participants were limited to 100, representing a wide range of views and geography, characterized by experience and expertise in CME.

The key objective of the organization is "to identify, and promote the implementation of, a rational, pluralistic, and coordinated system of CME, for the purpose of enabling physicians to be optimally effective in the delivery of patient care."

It is the consensus that the goal of CME is to optimize patient care. But though the cognitive and informational factors of a physician may be easily measured, quantifying the quality of patient care continues to be illusive. Of the many issues considered, one stood out for me because it seems so impor-

tant especially for the future, yet not emphasized enough. It was the role of the physician in the delivery of health care as the integrator, the planner, and organizer rather than just the implementer. The concept emanated from the Task Force Report on Defining Needs in discussing the role of the practicing physician in the health care system.

Our tradition and role in diagnosis and treatment are not questioned, but they are in planning and coordinating health services to solve specific health problems of patients and their families. Are they being lost to other professionals? If physicians cannot change or lose the ability to comprehend the complex issues of managing systems, society will look to other individuals to coordinate health care, as it seems already to have started.

With such a broad role for a physician as a premise, CME must direct itself to these functions, otherwise they will be lost by physicians and taken over by other professionals. Increasingly the health care needs of patients can only be met by a number of professionals working together. The components required for health care differ in each situation; therefore, the role of the physician must adapt to these needs. The road to recovery must be planned, and as in any planned activity, there must be an organizer. Who should it be? Not only in conviction, but in practice the physician should lead and direct the team from the patient's initial entry into the system to final disposition. And without minimizing the need for the physician "to know the facts," it is becoming more important that he be able to recognize where he is deficient in terms of needed information and have the ability to find information wherever it may be in the total care of the patient. In short, he needs not only the skills of a clinician, but of a manager and educator. So CME will have to adapt itself to these various and changing roles. As a clinician, he must be able to employ the scientific method for problem solving, and certainly keep up with the ever increasing storage of knowledge. As an administrator, he must keep up with changes in planning activities, in delegation, and in coordination among the many people at different levels, increasing not only in number, but also in special fields. As an educator, he must make a conscious effort to play that role not only for the patient and his family, but also to those professional non-physicians directly concerned in the care of his patients, and even to his colleagues in other fields.

The task force suggested as one model the example of a patient who has been a victim of a cerebral vascular accident, and is now aphasic. A careful analysis of the many problems in the course of such a patient's progress reveals many educational areas to be achieved through various kinds of CME. In short, CME must in

principle be directed to the needs of the physician in his many roles. Though we physicians accept our role as clinicians, we must not forget the role of manager and educator in the health team; if we are not alert, the physician will not be the leader of the health team, but one among equals.

Fred Fabro, M.D.

Detecting Arrhythmias After Myocardial Infarction

Crawford and his colleagues compared the effectiveness of three techniques which can detect unsuspected arrhythmias in patients with a previous history of myocardial infarction. The three techniques were a 12-lead resting ECG, continuous recording of an ECG during treadmill exercise and electrocardiographic tape recordings during a 10- to 12-hour period of daily routine activity. *The table below* lists the inci-

Arrhythmias Detected in 60 Patients with a History of Myocardial Infarction	
	<i>Number of patients</i>
All methods	28
Resting ECG	8
Treadmill test	18
ECG monitor, 10 to 12 hr.	22

dence of arrhythmias detected in the 60 patients studied by the three methods.

The authors considered any ventricular premature beat on the standard ECG as significant. Any patient who demonstrated ventricular premature beats on the resting ECG also had positive findings during the exercise test and during continuous monitoring.

The authors concluded that the best techniques for detecting arrhythmias are the exercise test or continuous monitoring, the latter being superior to either of the other two methods. Continuous monitoring is not only more readily accepted by patients but also is able to detect serious arrhythmias more frequently than the exercise test. (*Circulation*, August 1974)

Letters To The Editor

Letters to the Editor are welcomed and will be published, if found suitable, as space permits. Like other material submitted for publication, they must be typewritten *double spaced* (including references), must not exceed 1½ pages in length and will be subject to editing and possible abridgment.

DR. WELD ON CONNECTICUT MEDICINE

To the Editor: If the comments of a former editor are of any value, I am taking the liberty of offering them. But first allow me to congratulate you on removing advertising from the front cover of *Connecticut Medicine* and thereby returning to a policy established many years ago. Such advertising in that location cheapens the Journal.

The scientific and special articles show a wide range of interest compatible with the developments in modern medicine. A large number of the scientific articles come from sources outside of Connecticut. Surely our physicians are doing much clinical and research work which, if they would but take pen in hand, could be offered for the benefit of their confreres. I note a paucity of material from the three Hartford hospitals. Where are the interesting case reports? The Editorial Board has but one representative from this large city which may be an oversight but in any event is a mistake. Each member of the Board should be instrumental in securing valuable manuscripts.

The number of advertisements is holding up quite well, appearing in about 30 per cent of the total pages in the January and February 1976 issues. (33 and one third per cent is considered a good balance.) The percentage of local to national advertisements shows practically the same proportion. I realize that in this day of government interference in the pharmaceutical industry, the result of assistance from the State Medical Journal Advertising Bureau in Chicago has been appreciably curtailed. I suggest that members of the Editorial Board could be of real assistance in securing advertising copy from their localities, such as banks, businesses, etc.

I like the present format of *Connecticut Medicine*. During the three years that the present editor has been in charge, almost solely due to his own efforts the Journal has shown a very commendable improvement. This is worthy of more cooperation from Connecticut physicians and in particular from the Editorial Board.

Stanley B. Weld, M.D.

West Hartford, CT.

Dr. Weld was Editor of the Connecticut State Medical Journal from 1936 to 1958.

MALPRACTICE

To the Editor: A Canadian surgeon spends \$50. to buy his malpractice insurance, his counterpart in the United States must pay \$4,000 to \$8,000.

If a doctor really makes a mistake, there is a need for reserve insurance funds to make restitution. However, malpractice has grown in the United States because extra money is "nice to have," and the American system allows any dissatisfied patient to go after it for free. He doesn't have to pay the attorney since the contingent fee takes care of that. If he loses, he pays no costs.

The litigation bash this country is roiling in evolved from automobile insurance and has become a national habit. Yet going after reserve funds unjustifiably is a national disgrace. It shows how private greed can be nourished by questionable legal ethics.

If the loser of a malpractice suit is not charged for the costs of the defense, why not go mining for money? The element of conspiracy of

the plaintiff and client going after big money must be recognized. "Conspiracy" (or champerty) is measured by the difference between a reasonable settlement and the astronomical awards that are made.

Whatever imperfections in medical care delivery fuel the fires of litigation must be worked on by doctors. But the greed and free-wheeling of plaintiffs and attorneys must also be examined.

A combined effort should be made by the medical profession and the insurance industry working together to educate the public and lobby the legislators.

Sidney Vernon, M.D.

Willimantic, CT.

OUT PATIENT CATARACT SURGERY

To the Editor: I read the article by Drs. Miles Gallin and Vivian Boniuck in the January issue with interest. I do not think anybody disagrees with the idea of shortening hospital stays for Cataract patients, but it has been my experience that my Cataract patients tend to have multiple system disease and to be on the elderly side. Further, it has been my experience that they do not get to their feet rapidly, even under local anesthesia. If they have bilateral surgery separated by several days, they have problems learning to use their new vision safely before going home. Since even with hospital surgery the total admission tends to be of the order of 4-5 days for one eye, and 8-9 days for two, compared to 14 days for each eye alone only 20 years ago when I was a resident, I do not feel particularly self conscious about hospitalizing these patients.

I do think that the concept of graduated care nursing floors is one which needs more implementation. These patients do not need, in many instances, a full range of nursing services for more than the first postoperative day. Self help then could be employed from that point on, if there were a way to do it practically.

Jerome K. Freedman, M.D.

New Haven, CT.

The above letter was referred to Dr. Galin who offers the following reply:

To the Editor: I am most pleased with Dr. Freedman's comments concerning our paper on "Out Patient Cataract Surgery." Obviously, whatever technique provides a surgeon with the best results should be the technique pursued. We have found that it is rarely necessary to hospitalize any elderly patient. If the patient has a medical illness, it is more than likely that the medical illness should be cared for prior to intraocular surgery. In general, if the patient is functioning well at home, no matter what associated illnesses are present, a 30-minute procedure rarely augments morbidity.

It has been our policy not to operate on second eyes in close approximation to first eyes. The potential for complication is not eliminated in 4 to 5 days, and the aphakic world is a difficult world at best to get used to. Consequently, we are rarely in the position of having to hospitalize a patient because a second eye is to be done.

Last, but not least, in the era of intraocular implants, visual rehabilitation of patients is quite prompt after cataract surgery. The need to adapt to the aphakic world is meaningfully reduced, particularly in the elderly where this operation seems to be most indicated.

I have enjoyed Dr. Freedman's comments and certainly would recommend that they be considered in light of developing indications for ambulatory surgery.

Miles A. Galin, M.D.

New York, NY

New York Medical College

PSYCHIATRY'S OWN IDENTITY CRISIS

To the Editor: I have just finished reading Dr. Hans H. Neumann's article about Psychiatry's Own Identity Crisis in the January 1976 issue of *Connecticut Medicine* and would like to express both my appreciation for it and a hearty "Well said, sir"!

In this era of the instant solution for age-old problems, with the fanatics and the merely envious crying their panaceas on all sides with not one whit of proof to back them up, it is a rare pleasure to read a sober, factual, rational and lucidly-written article such as this. I agree entirely with almost everything in it.

My only quibble would be about insurability for emotional disorders. I agree that the "interminable analysis" and many other forms of "therapy" could not and should not be paid for by insurance, but it does seem unfair that genuinely sick people (e.g. severe phobics) should be denied coverage for their illness merely because there is dispute about the relative efficacy of different therapies. Perhaps some sort of compromise?—such as a dollar limit, a limit on frequency of services and reimbursement only for Medical expenses, defined as treatment by a psychiatrist only and for certain specified diagnostic categories only, with perhaps a definition of what "therapy" is for insurance purposes.

At all events, thanks again for a sane and logical article.

E. Lloyd Dawe, M.D.

Danbury, CT.

To the Editor: Dr. Neumann deserves commendation for calling attention of the health professional community to the complex problems involved in trying to include mental health services in overall health planning now under way at all levels of government. Unfortunately, he elects to side with those who would solve the problem by drastically reducing or even totally excluding meaningful, albeit expensive, support and coverage by government for the care, treatment and prevention of mental illness. And then, in a familiar pattern taken by those in government, who are uninformed or who wish to shirk their responsibilities, he blames the group he wishes to exclude for not proving "scientifically" in advance that the support they need will produce the hoped for results. A case in point: the federal government under the administration of John F. Kennedy subsidized the construction of community mental health centers throughout the country. The federal government under the administration of Richard M. Nixon then refused to subsidize the staffing of these centers. They have never been adequately staffed to carry out the mental health programs for which the centers were built in the first place. Conclusion by many government officials, apparently including Dr. Neumann: The community mental health center concept has been proven a failure, and its programs of primary, secondary and tertiary prevention of mental illness are now to be regarded as myths.

Dr. Neumann, isn't it a myth that "scientific" criteria of effectiveness always precede public tax support for social programs? Certainly our government itself, our military and penal institutions, and our legal and educational systems are funded without prior scientific validation. Humane and mature considerations require that we commit our tax dollars to programs that we know empirically are necessary, that make sense and to have considerable validation based on widespread experiences of experts and authorities, even if not experimentally proven and controlled. Programs involving psychological and behavioral changes are inherently almost impossible to validate scientifically because of the many complex variables involved, and the problems of getting matched sample groups for controlled experiment. The value and necessity of psycho-social programs for the care, treatment and prevention of mental illness are so well known

experientially, and so well documented in our professional literature, as to make your claims that they are myths ridiculous, and tragic, since you do seem to speak for many in government and in the health field itself.

Louis B. Fierman, M.D.

Portland, CT.

The above letters were referred to the author of the article in question who offers the following reply:

To the Editor: Since Dr. Fierman's comments seem to refer chiefly to the merits of fiscal funding of psycho-social programs, it should be reiterated that the question I raised in this respect was not the worthiness of such programs but the difficulty of defining their scope and limits relative to the non-psychotic.

If the demand is made for tax support, particularly on a fee-for-service basis, this is further complicated by the problems of determining who is qualified to carry out such treatments, apart from psychiatrists, by what methods, and for how long.

It was not my intention to oppose mental health centers or psycho-social programs, but to question over-optimistic, extravagant projections regarding their functions. In some states such programs have culminated in the presumption that state hospitals are no longer needed since the "community" can take care of prevention as well as of residential needs and treatment of the psychotic. Much of this was an outgrowth of the overconfident mental health expectations of the early 1960's and resulted in disappointments and disillusionment. A more sober and realistic review of the Mental Health Planning process is certainly called for.

I fully agree with Dr. Dawe that mentally and emotionally sick people, such as those he mentions, should have the benefit of coverage by insurance and have access to diagnostic and therapeutic services by those who are qualified.

Hans H. Neumann, M.D.

Future Agenda

In an article entitled "Big Changes You'll See in the Next 10 Years," the January "Changing Times" reports that "In the years ahead the drive will be to get better medical treatment for millions now without it. Even though we currently spend \$118 million a year, we have conditions such as these: 42 million Americans are unprotected by any kind of health insurance; 30 per cent of our preschoolers are not immunized against common communicable diseases; a third of the women who give birth in public hospitals have had no prenatal care; disability rates are 50 per cent higher for the poor than for those with incomes of \$10,000 or more; life expectancy is seven years longer for whites than for nonwhites."

Guidelines for Prescribers

The Joint Conference Committee of the Connecticut State Medical Society and the Connecticut Pharmaceutical Association has reviewed the problem of patient non-compliance with medication orders due to less than optimal prescription writing and prescription labelling. The Committee has reviewed the literature on this subject.

In order to provide the maximum benefits from the use of drugs by their patients physicians and pharmacists must maintain effective written communication not only among themselves, but with their patients as well. The directions for drug use and other information which prescribers indicate on prescription orders and which pharmacists indicate on prescription labels and in their dialogues with patients are critical to safe and effective drug therapy. In order to assure that this information is conveyed clearly and effectively to patients, the following guidelines have been developed and adopted jointly by the American Society of Internal Medicine and the American Pharmaceutical Association. The Joint Conference Committee of the Connecticut State Medical Society and Connecticut Pharmaceutical Association strongly endorses these guidelines and encourages both physicians and pharmacists to read and adopt them in the interest of improved drug therapy.

The following guidelines are recommended for prescribers when writing directions for drug use on their prescription orders.

1. The name and strength of the drug dispensed will be recorded on the prescription label by the pharmacist unless otherwise directed by the prescriber.
2. Whenever possible, specific times of the day for drug administration should be indicated. (For example, Take one capsule at 8:00 a.m., 12:00 noon, and 8:00 p.m. is preferable to Take one capsule three times daily. Likewise, Take one tablet two hours after meals is preferable to Take one tablet after meals.)
3. The use of potentially confusing abbreviations, i.e., qid, qod, qd, etc., is discouraged.
4. Vague instructions such as "Take as necessary" or "Take as directed" which are confusing to the patient are to be avoided.
5. If dosing at specific intervals around-the-clock is therapeutically important, this should specifical-

ly be stated on the prescription by indicating appropriate times for drug administration.

6. The symptom, indication, or the intended effect for which the drug is being used should be included in the instructions whenever possible. (For example, Take one tablet at 8:00 a.m. and 8:00 p.m. for high blood pressure, or Take one teaspoonful at 8:00 a.m., 11:00 a.m., 3:00 p.m., and 6:00 p.m. for cough.)
7. The Metric System of weights and measures should be used.
8. The prescription order should indicate whether or not the prescription should be renewed and, if so, the number of times and the period of time such renewal is authorized. Statements such as "Refill prn" or "Refill ad lib" are discouraged.
9. A separate prescription blank should be used for each drug prescribed.
10. When institutional prescription blanks are used, the prescriber should print his/her name, telephone number and registration number on the prescription blank.

Guidelines for Pharmacists

1. Pharmacists should include the following information on the prescription label: name, address, and telephone number of pharmacy; name of prescriber; name, strength, and quantity of drug dispensed (unless otherwise directed by the prescriber); directions for use; prescription number; date on which prescription is dispensed; full name of patient, and any other information required by law.
2. Instructions to the patient regarding directions for use of medication should be concise and precise, but readily understandable to the patient. Where the pharmacist feels that the prescription order does not meet these criteria, he should attempt to clarify the order with the prescriber in order to prevent confusion. Verbal reinforcement and/or clarification of instructions should be given to the patient by the pharmacist when appropriate.
3. For those dosage forms where confusion may develop as to how the medication is to be administered (for example, oral drugs which may be mistakenly instilled in the ear or suppositories which may be mistakenly administered orally), the pharmacist should clearly indicate the intended route of administration on the prescription label.
4. The pharmacist should include an expiration date on the prescription label when appropriate.
5. Where special storage conditions are required, the pharmacist should indicate appropriate instructions for storage on the prescription label.

ARTHUR G. LIPMAN, Pharm. D. for the Joint Conference Committee.

Dr. Arthur G. Lipman, Drug Information Director, Yale-New Haven Hospital, New Haven, Ct. 06504.

Base your diagnosis on a 20-test profile (for the price of the old 12 tests)



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PATIENT (LAST NAME) **JONES** FIRST NAME **JOHN** N.E.M.L. NO. **1123456**
PHYSICIAN OR LABORATORY **DR. G. SMITH** ACCOUNT NO. **1042B** ID NO. **000343**
SAMPLE DATE **3/9** DATE RECEIVED **3/9** REMARKS **FASTING** LAB **1**

**LABORATORY REPORT
PROFILES AND GROUP TESTS
PHYSICIAN/LABORATORY COPY**

USUAL NORMAL RANGES

BUN 10-26 mg/dl	18 mg/dl
Creatinine 0.7-1.4 mg/dl	3.6 mg/dl
Total Protein 6.0-8.5 gm/dl	6.4 gm/dl
Albumin 3.0-5.5 gm/dl	3.3 gm/dl
Cholesterol >40 150-330 mg/dl <40 140-270 mg/dl	154 mg/dl
Triglycerides 30-175 mg/dl	107 mg/dl
Uric Acid 2.5-8.0 mg/dl	3.4 mg/dl
Calcium 9.0-11.0 mg/dl	8.1 mg/dl
Phosphorus 2.5-4.5 mg/dl	3.8 mg/dl
Serum Iron 37-184 mcg/dl	223 mcg/dl
Globulin 2-4 gm/dl	3.10 gm/dl
BUN/Creatinine 10:1 Ratio	31.25

SEQUENCE NO. 827	
Total Bilirubin 0.2-1.2 mg/dl	1.1 mg/dl
SGOT 0-48 U/L	16 U/L
SGPT 0-45 U/L	48 U/L
Alk Phos 30-115 U/L	123 U/L
LDH 100-235 U/L	177 U/L
Sodium 135-145 meq/L	131 meq/L
Potassium 3.5-5.0 meq/L	4.0 meq/L
Chloride 96-106 meq/L	98 meq/L
Carbon Dioxide 19-26 meq/L	25 meq/L

USUAL NORMAL RANGES

A/G Ratio 1.1-1.8	1.06
SGOT/SGPT Ratio	0.33

TEST	NORMAL RANGE	RESULTS
GLUCOSE	65-110 mg/dl	100 mg/dl
P.B.I.	4-8 mcg/dl	mcg/dl
T.T.	4-10 mcg/dl	mcg/dl
T.3	35-45 %	%
T.4	4.5-11.5 mcg/dl	mcg/dl
T.7	1.5-5.2	

COMMENTS

REPORT REVIEWED BY

DATE

Now you can order a profile with the results of the 12 tests physicians usually request - plus 8 new ones. Yet the cost is the same or lower. How? New England Medical Laboratories has installed an advanced, new third-generation biochemical blood analyzer that is computerized and completely automated. You get a digital print-out that is easier to read, more accurate and reliable, and contains more basic diagnostic information. Right now it is available from New England Medical Laboratories, one of the largest, full-service laboratories in this area. Courier pickup and delivery service available. For detailed information, fill out and return the coupon, or call toll free 1-800-225-4603, (Mass: 1-800-982-4700).

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Holliston, Massachusetts 01746

184th ANNUAL MEETING
of the
CONNECTICUT STATE MEDICAL SOCIETY
Hartford Hilton Hotel
10 Ford Street, Hartford, Connecticut
April 28, 29, 1976

**COMMITTEE ON PROGRAM OF THE
SCIENTIFIC ASSEMBLY**



WILLIAM F. ECKHARDT, JR.

William F. Eckhardt, Jr., New Canaan, Chairman
Michael J. Esposito, Meriden
D. Norman Markley, Hartford
Malcolm M. Ellison, New London
Frederick I. Fischbein, Middletown

A MESSAGE FROM THE PRESIDENT

This 184th Annual Meeting of The Connecticut State Medical Society represents another opportunity for every member to participate in the educational and organizational activities of the Society.

The two day exercise, so successful last year, will be continued. The House of Delegates will meet on April 28th to discuss and formulate policies on such matters as malpractice, physician discipline, continuing education, and unified membership. The latter two subjects will undoubtedly generate a great deal of controversy because they will become a condition of membership in the State Society. This implication has many ramifications, not only regarding malpractice coverage, but also as it will affect additional benefits contingent on County and/or State membership.

We will be honored by two guests during the first day: Governor Ella Grasso, and Tom E. Nesbitt, M.D., Speaker of the House of Delegates of the American Medical Association. Each will address the House on subjects of vital concern to the membership.

On the evening of the 28th, the Annual Dinner of the Society will be held. All members, their families and friends, are invited to attend. For delegates and guests of the House, the dinner will provide relaxation after a long, hard working session and for all who participate there will be opportunity to renew old acquaintances and acquire new ones. Spouses and others planning to attend the Annual Dinner may accompany the delegates to the meeting and occupy their day by enjoying a visit to the new Hartford Civic Center, which is only one block from the Hartford Hilton Hotel. The Center's shopping mall is one of the largest in Connecticut offering some fifty stores and shops and several restaurants.

The Annual Dinner will be highlighted by the inauguration and presidential address of the incoming President, Hilliard Spitz, M.D., of New London, followed by a musical program.

Please take advantage of this opportunity to meet and pay tribute to your new president.

The theme of the Scientific Program, scheduled for Thursday, the 29th, is Hypoglycemia and Estrogen Therapy. The subjects are relevant and the scheduled speakers stimulating—another tribute to our Program Committee. Time has been allotted in the schedule for audience participation. The scientific meeting has been approved for the AMA educational recognition award on an hour per hour basis. Section meetings will be held concurrently, offering individual programs of special interest.

The Society has long been an outstanding example of contentious democracy. Your attendance and involvement could also make it a similar example of participatory democracy.

GUY W. VAN SYCKLE

GENERAL INFORMATION
READ CAREFULLY

REGISTRATION

The registration desk will be located on the mezzanine floor and everyone attending the meeting is requested to register. There will be no charge for registration and all members of the Society will be given a guest luncheon ticket when and only if they register.

PARKING

There are ample parking facilities at the hotel and in the surrounding area.

TELEPHONE

Telephone messages will be received at Hartford 249-5611.

LUNCHEON

Luncheon will be served in the Terrace Room on the mezzanine floor on April 29 and ALL MEMBERS OF THE SOCIETY REGISTERING WILL BE THE GUESTS OF THE SOCIETY. PLEASE REMEMBER A LUNCHEON TICKET WILL BE GIVEN TO MEMBERS ONLY IF THEY REGISTER.

HOTEL ACCOMMODATIONS

Persons who wish to remain overnight should make reservations not later than two weeks prior to opening date of the meeting. Reservations will be held until 6:00 P.M. on the day of arrival, unless later hour is specified. Please indicate in your letter that you are attending the Connecticut State Medical Society meeting. Your letter should be directed to the Front Office Manager, Hartford Hilton Hotel, 10 Ford Street, Hartford, Connecticut.

ANNUAL DINNER

The Annual Dinner will be held at the hotel on Wednesday, April 28, 1976. The social hour will be at 6:30 P.M. and the dinner at 7:30 P.M. All persons attending the dinner will be the guests of the Society at the social hour. Your reservations for dinner should be sent in as soon as possible to the CSMS office.

PROGRAM

The scientific portion of the Annual Meeting will be concentrated in one day, April 29, 1976. The general program will be held in the Capitol Ballroom between 10:30 and 4:30; and section meetings will be held in the morning at 8:30 A.M. and in the afternoon at 4:30 P.M. in the rooms listed in the program.

EXHIBITS

All the exhibits will be located on the mezzanine floor. Physicians should take advantage of the opportunity to review what is new and timely by visiting the commercial exhibits.

ALL ACTIVITIES WILL TAKE PLACE AT THE HOTEL
UNLESS OTHERWISE INDICATED.

CONTINUING MEDICAL EDUCATION CREDITS

AMA PHYSICIAN'S RECOGNITION AWARD

The Yale University School of Medicine has accredited the scientific program of the Society's Annual Meeting for Category One Credit toward the AMA Physician's Recognition Award. Credit is granted in this category on an hour-for-hour basis.

AMERICAN ACADEMY OF FAMILY PHYSICIANS

The Commission on Education of the AAFP has accredited the scientific program of the Society's Annual Meeting for 5-1/2 hours of prescribed credit for the general lectures and the family practice section meeting, and one hour for elective credit for each lecture attended which is presented by the individual specialty sections of the Society.

HOSPITAL RESIDENTS, INTERNS AND MEDICAL STUDENTS ARE CORDIALLY INVITED TO ATTEND THIS MEETING.

ANNUAL MEETING OF THE HOUSE OF DELEGATES

WEDNESDAY, APRIL 28
CAPITOL BALLROOM MEZZANINE

Presiding:

TIMOTHY F. NOLAN, *Greenwich, Speaker of the House*
DAVID A. GRENDON, *Sharon, Vice-Speaker of the House*

- 7:30 REGISTRATION OF DELEGATES—Mezzanine Floor
Continental Breakfast for Delegates and Official Guests
- 8:30 CALL TO ORDER
OPENING SESSION
REFERENCE COMMITTEE HEARINGS
- 1:15 LUNCHEON—Terrace Room, Mezzanine
FIFTY YEAR MEMBERSHIP AWARDS
Stuart Howard Bowman, Naples, Florida
Alfred Joseph Finn, Waterbury
Edward Earl Fitzpatrick, St. Petersburg, Florida
Amos Edgar Friend, Manchester
Morris Glazer, New Haven
Paul Beattie MacCreedy, Woodbridge
Winthrop Prescott Partridge, Fort Lauderdale, Florida
Charles Russman, Hallandale, Florida
Edward Taylor Wakeman, New Haven
Edward Everett Williams, Naugatuck
- GUEST SPEAKER: Tom E. Nesbitt, Nashville, Tennessee
Speaker of the House of Delegates, AMA
- 3:00 CALL TO ORDER—Capitol Ballroom
FINAL SESSION
- 6:15 ADJOURNMENT

ANNUAL DINNER OF THE SOCIETY WEDNESDAY, APRIL 28

TERRACE ROOM
Social Hour 6:30 P.M.

MEZZANINE
Dinner 7:30 P.M.

PROGRAM

Presiding: GUY W. VAN SYCKLE, *Danbury*

- PRESENTATION OF GUESTS AND DELEGATES
FROM STATE MEDICAL SOCIETIES
INAUGURATION OF INCOMING PRESIDENT
HILLIARD SPITZ, NEW LONDON
PRESIDENT'S ADDRESS
DINNER MUSIC
ENTERTAINMENT

GENERAL SCIENTIFIC PROGRAM

THURSDAY, APRIL 29

MORNING SESSION

8:15 **REGISTRATION**—Mezzanine

8:30—10:00 **MEETING OF SECTION OF THE SOCIETY AND GUEST ORGANIZATIONS**
(Listing elsewhere in program)

10:00 **INTERMISSION TO VISIT EXHIBITS**—Mezzanine

BALLROOM

10:20 **CALL TO ORDER AND WELCOMING REMARKS**
Hilliard Spitz, New London, President
Connecticut State Medical Society

10:30 **PANEL ON HYPOGLYCEMIA—FADS, FACT AND FICTION—IS THIS WHY JOHNNY CAN'T READ OR COPE?**

Moderator and Panelist:

PHILIP FELIG, NEW HAVEN, CONNECTICUT; Professor and Vice-Chairman, Department of Internal Medicine, Chief Section of Endocrinology, Yale University School of Medicine.

PHYSIOLOGICAL APPROACH TO HYPOGLYCEMIA
DAVID M. KIPNIS, ST. LOUIS, MISSOURI; Busch Professor and Chairman, Department of Medicine, Washington University School of Medicine; Physician-in-Chief, Barnes Hospital, St. Louis.

HISTORICAL PERSPECTIVE OF HYPOGLYCEMIA
RONALD ARKY, CAMBRIDGE, MASSACHUSETTS; Professor of Medicine, Harvard Medical School at Mount Auburn Hospital; Chief of Medicine, Mount Auburn Hospital.

DISCUSSION: QUESTIONS AND ANSWERS

12:30 **INTERMISSION TO VISIT EXHIBITS**

1:00 **LUNCHEON**—Terrace Room

AFTERNOON SESSION

BALLROOM

2:00 **PANEL ON FADS, FACTS AND FICTION OF ESTROGEN THERAPY, IS IT RISKY?**

Moderator and Panelist:

JOHN McLEAN MORRIS, NEW HAVEN, CONNECTICUT; John Slade Ely, Professor of Gynecology, Yale University School of Medicine; Chief of Gynecology, Yale New Haven Hospital.

ESTROGEN THERAPY: WOULD YOU GIVE IT TO YOUR MOTHER?

WALTER L. HERRMANN, SEATTLE, WASHINGTON; Professor, Department of Obstetrics and Gynecology, Active Medical Staff, University Hospital.

A RISK-BENEFIT APPROACH TO THERAPY

BRUCE F. BOWER, HARTFORD, CONNECTICUT; Clinical Endocrinologist, Hartford Hospital; Associate Clinical Professor of Medicine, University of Connecticut Health Center.

DISCUSSION: QUESTIONS AND ANSWERS

4:00 **INTERMISSION TO VISIT EXHIBITS**

4:30 **MEETINGS OF SECTIONS OF THE SOCIETY AND GUEST ORGANIZATIONS**
(Listing elsewhere in Program)

SPEAKERS



PHILIP FELIG



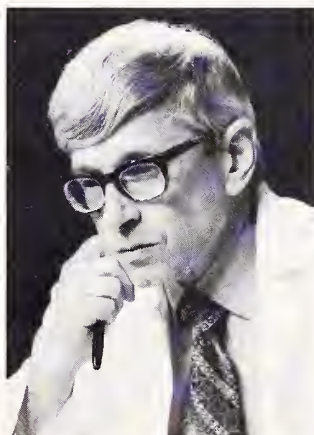
DAVID KIPNIS



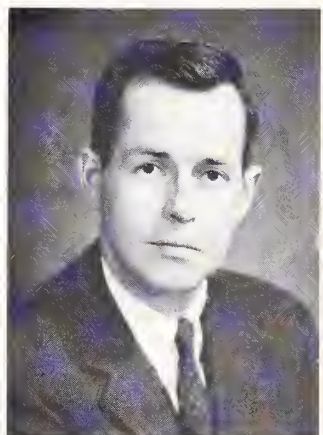
RONALD ARKY



JOHN McLEAN MORRIS



WALTER L. HERMANN



BRUCE F. BOWER

MEETINGS OF SECTIONS OF THE SOCIETY AND GUEST ORGANIZATIONS

WEDNESDAY, APRIL 28

AUXILIARY TO THE CONNECTICUT STATE MEDICAL SOCIETY THIRTY-SECOND ANNUAL MEETING

SIGNATURE RESTAURANT
1 Civic Center Plaza, Hartford

President: MRS. GEORGE E. ROCH, *Mansfield Center*
Recording Secretary: MRS. FRANCIS BRUNO, *West Hartford*
Corresponding Secretary: MRS. RAYMOND P. BOPP,
Mansfield Center

- 10:00 Registration
10:30 Greetings: Mrs. Kenneth H. White, President Auxiliary,
Hartford County Medical Association
Business Meeting: Mrs. George E. Roch, Presiding
12:00 Social Hour
12:30 Luncheon and Fashion Show
1:15 Address and Installation of Officers for 1976-77
Mrs. Norman H. Gardner, East Hampton, President-
Elect of AMA Auxiliary
Response: Incoming President,
Mrs. Mehadin K. Arafah, Middletown
3:00 Tour—Wadsworth Atheneum

SPECIAL NOTICE

The Signature Restaurant is in the new Civic Center, which is one of Connecticut's most exciting shopping centers with fifty stores and is located only one short block from the Hartford Hilton Hotel, where the CSMS House of Delegates meeting will be held.

Members of the Auxiliary are invited to attend the Annual Dinner of the Connecticut State Medical Society, which will be held at the Hartford Hilton Hotel, beginning with the social hour at 6:30 P.M. The Auxiliary will have a hospitality suite at the Hartford Hilton for use by the members following the Auxiliary meeting and prior to the CSMS Annual Dinner.

THURSDAY, APRIL 29

MORNING SESSION

SECTION ON FAMILY PRACTICE

8:30 A.M. Rooms 436-440
President: Theodore Safford, Jr., Ridgefield
Secretary: Marjorie A. Purnell, Rockville

SYMPOSIUM ON SPORTS MEDICINE

PRACTICAL ASPECTS OF WEIGHT CONTROL IN WRESTLERS
Edward Meyers, Ph.D., East Hartford

FOOT PROBLEMS IN RUNNERS

David M. Brody, Norwalk

LATERAL FLEXION INJURIES OF THE NECK IN FOOTBALL

Norman A. Zlotsky, Rockville

QUESTION AND ANSWER PERIOD

SECTION ON INTERNAL MEDICINE

8:30 A.M. Cities Rooms

President: William F. Eckhardt, Jr., New Canaan

Secretary: Arnold M. Koff, Avon

SYMPOSIUM: WHAT YOU HAVE ALWAYS WANTED TO KNOW
ABOUT DIABETES MELLITUS BUT HAD NO CHANCE TO ASK!

Moderator:

David S. Wilcox, Hartford; President, Diabetes Association
of Connecticut.

Panel:

Robert S. Sherwin, New Haven; Assistant Professor of Med-
icine, Yale University School of Medicine.

James M. Streeto, Hartford; Internist

Mary Lou Condon, Hartford; Teaching Nurse, Hartford
Hospital

Nimi Auerbach, New Haven; Dietician, Yale-New Haven
Hospital

This Program has been arranged in cooperation with The Dia-
betes Association of Connecticut, The Society of Internal Medi-
cine, and The Endocrine Society.

SECTION ON PHYSICAL MEDICINE AND REHABILITATION

8:30 A.M. Room 424

President: Kent E. Sharian, Waterbury

Secretary: Manuel E. Mino, Wethersfield

UROLOGIC CARE IN CHRONIC DISEASE

Edward J. McGuire, New Haven; Assistant Professor of
Urology, Yale University School of Medicine

SECTION ON PSYCHIATRY

8:30 A.M. Room 404

President: Donald L. Brown, Hartford

Secretary: Darius G. Ornston, New Haven

MANAGEMENT OF ACUTE CRISES IN FAMILIES

Donald A. Bloch, New York City; Director, Ackerman Fam-
ily Institute, New York.

SECTION ON PULMONARY DISEASES

9:30 A.M. Rooms 408-412-416

Chairman: Sreedhar Nair, Norwalk

Secretary: Norman L. Fine, Derby

SYMPOSIUM ON EXERCISE PHYSIOLOGY IN PULMONARY DISEASES

Karl Wasserman, Los Angeles, California; Professor of Med-
icine and Chief of Pulmonary Diseases, University of South-
ern California.

Edward D. Michaelson, Miami, Florida; Associate Director
of Pulmonary Diseases, Mt. Sinai Medical Center, Miami.

Dermot Killian, Portland, Maine; Chief of Respiratory Dis-
ease Service, Mercy Hospital, Portland, Maine.

AFTERNOON SECTION PROGRAMS

SECTION ON ALLERGY

4:30 P.M. Room 424

President: Robert A. Lanzi, Orange

Secretary: Melvyn R. Ostrov, Waterbury

THE PROPER USE OF ANTIBIOTICS IN NASAL AND PULMONARY DISEASE

George F. Thornton, Waterbury; Chief of Medicine, Waterbury Hospital.

SECTION ON ANESTHESIA

Terrace Room

President: Alphonse Del Pizzo, New Haven

Secretary: John T. Conroy, Hartford

3:30 EXECUTIVE MEETING

4:30 BUSINESS MEETING

5:30 GUEST SPEAKER—Ralph A. Milliken, New York City; Assistant Professor of Anesthesiology, Mt. Sinai School of Medicine.

Subject: Pollution—Solution

6:30 RECEPTION AND DINNER

SECTION ON FORENSIC MEDICINE

12:30 P.M. New York-Washington Rooms

President: Joseph E. Daly, Waterbury

Secretary: Daniel W. Benninghoff, Greenwich

LUNCHEON MEETING (Dutch Treat)

GUEST SPEAKER—Elliot M. Gross, Hartford; Chief Medical Examiner, State of Connecticut.

Subject: Role of Forensic Medical Section in a State Medical Society.

SECTION ON GASTROENTEROLOGY

4:00 P.M.

University of Connecticut Health Center
Farmington

President: Robert S. Rosson, Hartford

Secretary: Morton Bender, New Haven

4:00 SEMINAR ON LIVER DISEASE

Speakers to be Announced.

5:30 RECEPTION

6:30 DINNER AND BUSINESS MEETING

SECTION ON NEUROSURGERY

4:30 P.M. Room 420

President: Melville P. Roberts, Hartford

Secretary: Donald W. Cooper, New London

MALPRACTICE LEGISLATION

Harold Wilkinson, Boston, Massachusetts; Chairman, Department of Neurosurgery, Beth Israel Hospital, Boston.

SECTION ON OBSTETRICS AND GYNECOLOGY

4:30 P.M.

Room 416

President: Peter A. Goodhue, Stamford

Secretary: Philip C. Dennen, Waterbury

MENOPAUSE, ESTROGENS AND CANCER

Murray J. Casey, New Britain; Associate Professor of Obstetrics and Gynecology, Director of Gynecologic Oncology, University of Connecticut Health Center, Farmington.

SECTION ON OPHTHALMOLOGY

4:30 P.M.

Rooms 436-440

President: David W. Parke, Meriden

Secretary: Stanislaw A. Milewski, Manchester

CURRENT TRENDS IN MODERN OPHTHALMIC POLITICS

Whitney Sampson, Houston, Texas; Member of the Council of the American Academy of Ophthalmology and Otolaryngology.

DINNER TO FOLLOW

SECTION ON ORTHOPEDICS

3:00 P.M.

DeSales Hall—St. Francis School of Nursing
448 Asylum Avenue (across from Hilton Hotel)
Hartford, Connecticut

President: Hubert B. Bradburn, New Haven

Secretary: John D. Haugh, Hartford

SYMPOSIUM ON FOOT PROBLEMS

Speakers to be Announced

SECTION ON PATHOLOGY

4:30 P.M.

Room 408

President: Bertrand P. Bisson, Waterbury

Secretary: William R. Bronson, Hartford

TUMORS OF SMOOTH AND STRIATED MUSCLE

John L. Cornog, Jr., New Haven; Associate Professor of Pathology, Yale University School of Medicine.

SECTION ON PROCTOLOGY

4:30 P.M.

Buffalo Room

President: Bernard J. Kaplan, Hartford

Secretary: Sanford Savin, Bridgeport

BUSINESS MEETING

ELECTION OF OFFICERS

**SECTION ON THORACIC AND
CARDIOVASCULAR SURGERY**

4:30 P.M. Boston Room

President: Joseph P. Shea, Bridgeport

Secretary: Allan L. Toole, New Haven

BUSINESS MEETING

ELECTION OF OFFICERS

SECTION ON UROLOGY

4:30 P.M. Room 412

President: Timothy F. Nolan, Greenwich

Secretary: Haik Kavookjian, Jr., Darien

LITHOTRIPSY—How To Do It?

Arthur Tessler, New York City; Professor of Clinical Urology,
New York University College of Medicine.

**CONNECTICUT MEDICAL
POLITICAL ACTION COMMITTEE (COMPAC)**

4:00 P.M. Room 404

Chairman: John J. Mendillo, New Haven

Secretary: Mrs. John J. Mendillo, New Haven

BUSINESS MEETING

ELECTION OF OFFICERS

IMPORTANT—PLEASE NOTE

The following Sections of the Society will not be meeting on
April 29, due to various reasons. The programs, dates and time follow:

SECTION ON DERMATOLOGY AND SYPHILOLOGY

12:00 Noon

Wednesday, April 21, 1976

Mermaid Tavern, Stratford, Connecticut

President: Wayne T. Branom, Jr., Greenwich

Secretary: Brian J. McGrath, Guilford

CLINICAL ASPECTS OF BULLOUS DISEASES

Charles P. DeFeo, Jr., New York City; Associate Clinical
Professor of Dermatology, New York University School of
Medicine.

SECTION ON OTOLARYNGOLOGY

3:30 P.M.

Wednesday, May 5, 1976

Yankee Silversmith Inn, Wallingford, Connecticut

President: Arthur W. Samuelson, Bridgeport

Secretary: Ronald J. Pimpinella, Torrington

GUEST SPEAKER:

Richard Gacek, Worcester, Massachusetts; Professor and
Chairman, Department of Otolaryngology, University of
Massachusetts.

SECTION ON PEDIATRICS

1:00 P.M.

Wednesday, May 5, 1976

University of Connecticut Health Center, Farmington

Chairman: Frederick J. Flynn, Newington

Secretary: Estelle Siker, Hartford

SYMPOSIUM ON RECENT DEVELOPMENTS IN PEDIATRICS

Recent Advances in Reyes Syndrome

New Approach to Treatment of Enterocolitis

New Approaches to Diagnosis of Cystic Fibrosis

Multiple Manifestations to Neuroblastoma

Primary Physician's Role in Care of Down's Syndrome

Changing Antibiotic Susceptibility to H-Influenza

Renal Dialysis and Transplantation in Children

Management of Asthma

To be discussed by faculties of the Yale School of Medicine and
the University of Connecticut School of Medicine.

TECHNICAL EXHIBITS

Aetna Life and Casualty, Hartford, Connecticut

Biometric Systems, Inc., Commack, New York

J. C. Carter & Company, Darien, Connecticut

Coca-Cola, U.S.A.

COMPAC (Connecticut Medical Political Action Committee)

Arthur W. Eade Insurance Agency, New Haven, Connecticut

Exercycle Corporation, Hartford, Connecticut

Group Insurers, Inc., Hamden, Connecticut

Hoechst-Roussel Pharmaceuticals, Inc., Somerville, New Jersey

Medical Personnel Pool, Hartford, Connecticut

Portraits by Parle, New York, New York

The Purdue Frederick Company, Norwalk, Connecticut

J. B. Roerig, Division Pfizer, Inc., Clifton, New Jersey

Roman Research, Inc., Cohasset, Massachusetts

The Upjohn Company, Kalamazoo, Michigan

United States Air Force Medical Services

SPECIAL NOTICES

THE CONNECTICUT STATE MEDICAL SOCIETY

acknowledges with thanks

convention program grants received from:

Geigy Pharmaceuticals, Ardsley, New York

Eli Lilly & Company, Indianapolis, Indiana

Meade Johnson Laboratories, Evansville, Indiana

Merck Sharp & Dohme, West Point, Pennsylvania

Parke Davis and Company, Detroit, Michigan

Pfizer Laboratories, Clifton, New Jersey

A. H. Robins Company, Inc., Richmond, Virginia

Smith, Kline & French Laboratories, Philadelphia, Pennsylvania

FROM THE EXECUTIVE DIRECTOR'S OFFICE

160 St. Ronan Street, New Haven, Conn. 06511
Telephone 865-0587

Francis G. Sweeney
*Assistant Executive Director
Public Affairs*

William R. Richards, M.D.
Executive Director
Josephine P. Lindquist
Associate Executive Director

Leonard R. Tomat
*Assistant Executive Director
Scientific Activities*

Summary of Actions

Council Meeting

Wednesday, February 25, 1976

I. Attendance

Present in addition to the Chairman, Dr. D.A. Grendon, and the Vice Chairman, Dr. J.K. Freedman, were: Drs. Van Syckle, Spitz, Friedberg, Johnson, Backhus, Nolan, Root, Jr., Hess, Bradley, Cramer, Fabro, Granoff, Canzonetti, Kamens, Rubinow, Ragland, Jr., James, Krinsky, Sonnen, Beck, Ahrens, Mendillo, Eslami, Barrett, Harkins and Whalen.

Also present were: Mrs. Lindquist, Mr. Tomat and Dr. Richards.

Absent were: Drs. Klare, McGarry, Magram, Robinson and Dambeck.

In Memoriam—Norman H. Gardner, M.D.

Before calling the business meeting to order, the Chairman noted the death of Norman H. Gardner, East Hampton, on February 9, 1976. The members of the Council stood for a moment of reflective silence to honor the memory of this distinguished colleague and valued friend. A memorializing resolution will be transmitted to the House of Delegates on April 28.

II. Routine Business

Introduction of New Members

Introduced and welcomed as new members of the Council were: Lawrence B. Ahrens, New Britain, new Associate Councilor from the Hartford Association; William A. Whalen, Willimantic, new Associate Councilor from the Windham Association.

Approval of Minutes

As published and distributed, it was VOTED to approve the minutes of the meeting of January 29, 1976.

Life Memberships

It was VOTED to approve applications for Life Membership received from the following eligible Active Members:

Leonard F. DelVecchio, 472A Commancke Lane, Oronoque Village, Stratford.

Joseph Fraknoi, 101 South Main Street, Wallingford.

Waldo E. Martin, 33 North Street, Milford.

Elliott R. Mayo, 129 Prospect Street, Waterbury.

P. H. O'Connell, 10 Shetucket Street, Norwich.

Edo Pasetto, 1183 Hamilton Avenue, Waterbury.

Oscar Roth, 666 George Street, New Haven.

Henry Sherwood, 195 So. Main Street, Middletown.

Sidney Vernon, 185 Birch Street, Willimantic.

Date of Next Meeting

The Chairman set the date of the next Council meeting for Wednesday, March 24, 1976.

III. Old, New and Special Business

Appointments, Resignations, Etc.

(a) *CSMS Nominee to Statewide PSRO Council*: It was VOTED to nominate Isadore H. Friedberg, Newington, for appointment to the subject Council, replacing James D. Kenney, New Haven, previously nominated. The other nominee is Jerome K. Freedman, New Haven. These nominations will be forwarded to Governor Grasso for her appointment at such time as she requests them from the Society.

(b) *CSMS Nominees to Committees of Medicaid Program*: At the request of the Department of Social Services, it was VOTED to make subject nominations as follows: To the Title XIX Advisory Committee—Robert W. Harkins, Woodbury; To the Professional Advisory Committee to the Professional Policy Committee—Charles Polivy, Hartford.

(c) *Nominations to State Board of Examiners of Hypertrichologists*: It was VOTED to nominate for appointment by the Governor to serve on the subject Board (term of three years, starting 7/1/76) the following: Harry Bellach, New Britain. Since two nominees had been requested, Staff will seek to locate a second Board-certified dermatologist who is able to serve and submit his nomination also.

- (d) *Nominations to AMA Councils:* It was VOTED to approve and submit nominations for service on AMA Councils as follows: Council on Medical Education—Stuart Ragland, Jr., Colebrook; Judicial Committee—E. Tremain Bradley, Norwalk; Council on Medical Service—Sidney L. Cramer, Hartford; Council on Long Range Planning and Development—J. Alfred Fabro, Torrington; Council on Continuing Medical Studies—Orvan W. Hess, New Haven. These nominations will be submitted to the AMA Board of Trustees which is responsible for submitting a slate of such nominations to the House of Delegates for election.

Resolution—New London Association

It was VOTED to refer to the Committee on Third Party Payments, for study and report to the Council, a resolution introduced by the Board of Trustees of NLCMA which advocated that action (legislative or otherwise) be taken by the Society to require that medical care rendered in a physician's office be treated equitably (by third party payors) with equivalent care rendered in a hospital setting. In its report to the Council, the Committee on Third Party Payments will be asked to make a recommendation concerning possible legislative action of a specific nature that might be taken by the Society.

Petition to Form Section on Emergency Medicine

Finding the subject petition to be in order, the Council VOTED to approve the petition to form a Section on Emergency Medicine and to recommend to the House of Delegates on April 28 that establishment of the Section be approved.

Co-Sponsorship of Symposium

It was VOTED to approve co-sponsorship by the Society of a "Symposium on Nurse Practitioners and Physician's Assistants" to be held at the Ramada Inn, North Haven, on 5/6/76. Seven other Connecticut agencies are also being requested to join in sponsoring the Symposium. Co-sponsorship does not involve financial support.

Reports of the Fiscal Subcommittee

- (a) *Committee on the Medical Aspects of Sports:* It was VOTED to approve a recommendation of the Subcommittee that a 1976 budget allocation of \$125 be made to the subject Committee.
- (b) *Amendment of the Employee Pension Plan:* It was VOTED to approve the expenditure of an estimated \$600 for the purpose of engaging the Connecticut General Life Insurance Company to prepare such amendments to the Pension plan as are necessary for conformance with federal Employee Retirement Income Security Act of 1974. (ERISA).

Reports—Orvan W. Hess, New Haven

It was VOTED to receive three reports submitted by Orvan W. Hess, New Haven, as follows: (1) Recent activities of CRMP; (2) Recent activities of the South Central Comprehensive Health Planning Agency; and (3) Recent activities of New Haven Health Care, Inc.

Pursuant to receiving these reports, the Council took related actions as follows:

- (a) VOTED to request from the Connecticut Regional Medical Program further information about the status and disposition of funds allocated earlier to the Commissioner of Health for the purpose of undertaking several projects associated with Connecticut implementation of the "National Health Planning and Resources Development Act of 1974 (P.L. 93-641)." It was reported that the Commissioner may have found it to be not feasible to undertake the several projects at this time.
- (b) VOTED to direct the Chairman, in consultation with the President, to appoint a three-man delegation to meet with Governor Grasso to talk over with her plans for the makeup of the statewide agency called for by P.L. 93-641 and to convey to her the importance of affording M.D.s meaningful input into the HSA program.

Progress Report—Ambulatory Care Study

It was VOTED to receive as information a 2/23/76 letter from Ms. Ruth L. Riedel, CACS Research Director, which reported on the progress being made toward completion of the Study. In brief, the letter indicated that the unavailability of certain key technical personnel seems bound to delay somewhat the final analyses that need to be accomplished and that "we are likely to have trouble obtaining prime time from skilled programmers" to perform other essential tasks. No tentative date was mentioned as to when the final report on the Study might be published.

Resolution—Louis O. LaBella, Middletown

Being apprised that the people of Middletown are planning to honor Dr. LaBella at a dinner to be held in May, the Council VOTED to send Dr. LaBella (via W. Raymond James, MCMA Councilor) a resolution of congratulation as follows:

WHEREAS: The personal life and professional career of Dr. Louis O. LaBella, of Middletown, reflect admirably the contributions that the dedicated physician can make to his patients and to his community; and

WHEREAS: In America's Bicentennial Year, it is especially appropriate to honor a man whose character and good deeds as a doctor-citizen have

Testing in Humans: Who, Where & When.

the weight of ethical opinion:

Few would disagree that the effectiveness and safety of any therapeutic agent or device must be determined through clinical research.

But now the *practice* of clinical research is under appraisal by Congress, the press and the general public. Who shall administer it? On whom are the products to be tested? Under what circumstances? And how shall results be evaluated and utilized?

The Pharmaceutical Manufacturers Association represents firms that are significantly engaged in the discovery and development of new medicines, medical devices and diagnostic products. Clinical research is essential to their efforts. Consequently, PMA formulated positions which it submitted on July 11, 1975, to the Subcommittee on Health of the Senate Labor and Public Welfare Committee, as its official policy recommendations. Here are the essentials of PMA's current thinking in this vital area.

1. PMA supports the mandate and mission of the National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research and offers to establish a special committee composed of experts of appropriate disciplines familiar with the industry's research methodology to volunteer its service to the Commission.

2. PMA supports the formation of an independent, expert, broadly based and representative panel to assess the current state of drug innovation and the impact upon it of existing laws, regulations and procedures.

3. When FDA proposes regulations, it should prepare and publish in the *Federal Register* a detailed statement assessing the impact of those regulations on drug and device innovation.

4. PMA proposes that an appropriately qualified medical organization be encouraged to undertake a comprehensive study of the optimum roles and responsibilities of the sponsor and physician when company-sponsored clinical research is performed by independent clinical investigators.

5. PMA recognizes that the physician-investigator has, and should have, the ultimate responsibility for deciding the substance and form of the informed consent to be obtained. However, PMA recommends that the sponsor of the experiment aid the investigator in discharging this important responsibility by providing (1) a document detailing the investigator's responsibilities under FDA regulations with regard to patient consent, and (2) a written description of the relevant facts about the investigational item to be studied, in comprehensible lay language.

6. In the case of children, the sponsor must require that informed consent be obtained from a legally appropriate representative of the participant. Voluntary consent of an older child, who may be capable of understanding, in addition to that of a parent, guardian or other legally responsible person, is advisable. Safety of the drug or device shall have been assessed in adult populations prior to use in children.

7. PMA endorses the general principle that, in the case of the mentally infirm, consent should be sought from both an understanding subject and from a parent or guardian, or in their absence, another legally responsible person.

8. Pharmaceutical manufacturers sponsoring investigations in prisons must take all reasonable care to assure that the facilities and personnel used in the conduct of the investigations are suitable for the protection of participants, and for the avoidance of coercion, with a respect for basic humanitarian principles.

9. Sponsors intending to conduct non-therapeutic clinical trials through the participation of employee volunteers should expand the membership and scope of its existing Medical Research Committee, or establish such an internal Medical Research Committee, with responsibility to approve the consent forms of all volunteers, designs, protocols and the scope of the trial. The Committee should also bear responsibility to ensure full compliance with all procedures intended to protect employee volunteers' rights.

10. Where the sponsor obtains medical information or data on individuals, it shall be accorded the same confidential

status as provided in codes of ethics governing health care professionals.

11. PMA and its member firms accept responsibility to aid and encourage appropriate follow-up of human subjects who have received investigational products that cause latent toxicity in animals or, during their use in clinical investigation, are found to cause unexpected and serious adverse effects.

12. PMA supports the exploration and development by its member companies of more systematic surveillance procedures for newly marketed products.

13. When a pharmaceutical manufacturer concludes, on the basis of early clinical trials of a basic new agent, that a new drug application is likely to be submitted, a proposed development plan accompanied by a summary of existing data, would be submitted to the FDA. Following a review of this submission, the FDA, and its Advisory Committee where appropriate, would meet with the sponsor to discuss the development plan. No *formal* FDA approval should be required at this stage. Rather, the emphasis should be on identification of potential problems and questions for the sponsor's further study and resolution as the program develops.

The PMA believes that health professionals as well as the public at large should be made aware of these 13 points in its Policy on Clinical Research. For these recommendations envisage constructive, cooperative action by industry, research institutions, the health professions and government to encourage creative and workable responses to issues involved in the clinical investigation of new products.



Pharmaceutical Manufacturers Association
1155 Fifteenth Street, N.W.
Washington, D. C. 20005

helped to make great his adopted country; therefore be it

RESOLVED: That the Council of the Connecticut State Medical Society take cognizance of the honor being paid to a distinguished member of the Society, Dr. Louis O. LaBella, by the Middletown community, congratulate Dr. LaBella on his selection to receive such honor, and extend to him sincere wishes for good health and the ability to give continued outstanding service to his patients and his fellow citizens in the years ahead.

N.B.: *The foregoing is a summary of the proceedings and actions of the Council on February 25, 1976. Detailed minutes of the meetings are on file at 160 St. Ronan Street, New Haven, for perusal by any interested member of the Society.*

BOOK REVIEWS

The Biggest Con: How the Government is Fleecing You. By Irwin A. Schiff, Arlington House Publishers, New Rochelle, N.Y. \$9.95. 344 pp.

Once in a very great while one is fortunate enough to come across a book that explicitly explains a subject that has been a huge mystery or a frustrating enigma for many years. Occasionally one may come across a book that reveals new knowledge. Rarely one comes across a book that logically and understandably does all these things. Mr. Schiff's book happily falls in this last rare class in that it explains with great clarity the fundamentals of economics while exposing the illogic of some of our best known exponents of "uneconomics," particularly the Keynesians. Anyone privy to the rather vital information within the covers of this unique work need not fear ever again of being hoodwinked by the likes of Senator William Proxmire, or the so-called economic experts, Heller and Samuelson. More importantly, however, it reveals how the Federal Government, all branches included, have deceived the people, stolen from the people, and threatened the future well-being of the people since 1913. In this regard the Government are indicted out of their own mouths and with their own published records. Thanks to Mr. Schiff's lucid exposition these things become abundantly clear even to those untutored in the fields of government finance and in our sad case, un-economy.

How many taxpayers are aware that in contravention of the U. S. Criminal Code the U.S. Government, Inc. reports the national debt only in terms of its funded liabilities, illegally not mentioning the contingent and non-funded debt which if included, as it should be, would result in a figure of some five trillions of dollars. Did you know that your employees' literature refers to their Social Security tax as a "contribution", involuntary to be sure, and to your employers' payment as a "tax"? Are you aware that Social Security has been subverted, robbed, and misrepresented with purpose, resulting in its becoming precisely analogous to a chain letter? Can you believe that if the script you think of as money was still tied to gold at \$35.00 an ounce, oil would now cost two cents *less* per barrel than it did in 1971? Have you become aware that the fixed dollar assets you have been buying all these years (whole life insurance, annuities, retirement funds, etc.) will produce only the barest fraction of their planned (original) purchasing power, or why?

These things are only the tip of the iceberg revealed and documented in this most important exposition of the monetary policies of

our government. Do you know what "Cost-price-push," "expanding economy," and "extended credit" really mean? The chances are you do not. Yet if you value your children's future, not to mention your own, you had best read this book.

Mr. Schiff uses a kaleidoscope of methods in outlining his points of view and analysis. Some of it is straightforward arithmetical logic in the style of Aristotle, "True virtue is to be found at any point equidistant between opposite vices", circa 2500 B.C., in Mr. Schiff's case using, believe it or not, comprehensible numbers. Some of it is conveyed by documented, historical fact. Some of it is anecdotal, and some in parables. All of it is very convincing, frightening, and logical.

I cannot imagine any thoughtful, responsible, well-intentioned, man or woman who could not profit by reading this book, or who would not be provoked to deep and serious contemplation of the nature of our government and our future by it. No matter what one's persuasion might be this book cannot help but enlighten it. Somehow, Mr. Schiff brings it all to a conclusion with an optimistic slant that I personally cannot share. However balanced against this, he also presents a possible set of personal actions that could protect against the consequences of the ghastly errors of the government, past and present. I am, to be candid, ambivalent about sharing this critical information. However, as a devotee to Hippocrates, I am obliged to share with my colleagues this data in the hopes that it will profit them as well as me, and through us our patients, being our fellow citizens as well.

It would seem safe to say that if this book receives the readership it deserves, it will have a profound effect upon the understanding and thinking of a large segment of our literate population, small although that may be. And whereas I may be accused of arrogance and of being disdainful, there is nought in this splendid study that could ever justify such an accusation against its author who dedicated his book as follows:

"To my parents, Jacob and Anna Schiff, who, like millions of others, immigrated to these shores, not seeking or expecting a public subsidy, but seeking only those rewards that freedom, hard work, thrift, and self-reliance could bestow. May this spirit and these virtues be restored to American life to serve as inspiration for my two children, Peter and Andy, their generation and future generation of Americans".

STUART J. RAGLAND, JR., M.D.

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4. AHA acceptance of concept that medical staffs should be represented on hospital boards.
5. Rapid expansion of medical schools in past decade.
6. Extensive health manpower training support.
7. Development of legislation for emergency medical services systems.
8. Legislation for improving Indian medical and health care.
9. Significantly increased pay for military, VA and other federal physicians.

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PHYSICIAN PLACEMENT SERVICE

The Society maintains the Physician Placement Service as a service to the medical profession in the State of Connecticut. Opportunities for physicians to locate in Connecticut will be published as space permits and will be distributed to physicians making inquiry of such opportunities. Information should be sent to 160 St. Ronan Street, New Haven, Connecticut 06511, (203-865-6822).

Physicians wishing to establish practice in Connecticut are invited to submit a resume to be kept on file with the Society. An announcement of a physician's availability will be published in two consecutive issues of *Connecticut Medicine*.

PHYSICIANS WISHING TO LOCATE IN CONNECTICUT

Psychiatry: Available now. Wishes to return to Connecticut. Ct. License. Board eligible. Desires associate type practice. John E. Kelleher, Jr., M.D. 7929 Inverness Ridge Road, Potomac, MD.

Surgery: General Surgery and/ or General Practice. Wishes to locate in Conn. Trained in Canada and Ireland. Permanent USA resident. Nine years experience in general practice with surgery in emergency and family medicine.

Industrial or Institutional: Board certified physician wishes part time or full time employment in Danbury-Waterbury area. Resume on file at CSMS.

Surgery: General. Available July 1976. Board eligible. M.D. from St. Louis University School of Medicine. Internship and residency at University of Connecticut. Presently in the U.S. Army. James L. Massi, M.D., 24 Hemphill Road, Eatontown, NJ. 07724.

Surgery: General. FLEX. N.Y. License, Board eligible. Residency at Albert Einstein College of Medicine. Desires group, associate or institutional practice. Available July 1976. S. K. Moza, M.D., 1819 Williamsbridge Road, 2A, Bronx, NY. 10461.

Surgery: General. Available June 1976. Yale undergraduate. Tufts Medical. Internship and residency at Medical College of Virginia. Board eligible. Presently at St. John's Hospital, Mzuzu, Malawi, Africa. 33 years old. Completed two years in the service. Wilbert E. Perras, M.D., c/o R. Heckert, R.D. #7, German Church Road, Mansfield, Ohio.

Surgery: General and Vascular. Available July 1976. FLEX. Completing training at Temple. Board eligible. N.S. Rao, M.D., 9601 Ashton Road, #N.5, Philadelphia, PA. 19114.

Surgery: General. Connecticut license. Available July 1976. Staff surgeon at U.S. Naval Hospital. B.U., Tufts and University of Conn., Asst. Professor of Surgery (1974). Paul M. Rosoff, M.D., M-4 Phythian Road, Annapolis, MD. 21402.

Surgery: General. Available July 1976. Board eligible. Smith undergraduate. Yale Medical School. Presently at University of Toronto Affiliated Hospitals. Internship and residency at Mt. Sinai in N.Y.C. Resume available.

Surgery: General and Vascular. Available July 1976. Conn. license pending. Internship in pediatrics. Residency in surgery at Kings County in Brooklyn and Nassau County Medical Center. 33 years old. Desires group practice in large city. Thomas J. Rostas, M.D., 48 Twin Oak Drive, Kings Park, NY. 11754.

Surgery: General and Surgical Oncology. FLEX. Available July 1976. American Univ. of Beirut. SUNY Upstate at Syracuse. Lutheran Medical Center in Cleveland. A. H. Satilia, M.D., 16331 Heather Lane, Middleburg Heights, O. 44130.

Surgery: Peripheral Vascular. Trained at Mt. Sinai Hospital in NYC. NY license. Board certified. Mahendra Sheth, M.D., 427 East 83rd Street, NY, NY. 10028.

Surgery: General. Experience in trauma. Board eligible. At Nassau County Medical Center. University of Tehran and Mercy Hospital in Denver, Colorado. Available in July. D. Vahid, M.D., 200 Carman Ave., No. 12 D, East Meadow, NY., 11554.

Surgery: General. Conn. License. Board eligible. Yale Medical School. Internship at Yale-New Haven. Residency at Yale, L.S.U. and Berkshire Medical Center, Pittsfield, Mass. Presently on active duty. Available July 1976. Martin H. Wenner, M.D., 11545 Jaua Street, Cypress, CA. 90630.

Cardiology: Available July 1976. Completing Fellowship at Howard University. Graduate of Medical School in Cairo, Egypt. Trained in EKG's, CCU, coronary arteriograms. I.A. Sarris, M.D., 6511 Landover Road, No. 204, Cheverly, MD. 20785.

Urology: Board eligible. FLEX. Presently at Geisinger Medical Center. Available July 1976. Wife is a Board certified ophthalmologist. Both would like to practice in same area. M.H. Desai, M.D., 254 Liberty Street, Danville, PA. 17821.

Pediatrics: Board certified. Diplomate of National Boards. 31 years of age. Completing fellowship in pediatric gastroenterology. Seeks private, general practice with opportunity to teach. Amherst College, University of VT., Columbia Presbyterian in N.Y.C. and Einstein College of Medicine. Served two years in the U.S. Navy. Michael B. Andorsky, M.D., 145 W. 71st Street, NY, NY. 10023.

Pediatrics: Board eligible. Available now. Group practice or institutional setting. 29 years of age. Single. New York Medical College and St. Vincent's Hospital in N.Y.C. Lorraine Archibald, M.D., 305 East 24th Street, NY, NY. 10010.

Pediatrics: (Surgery). Desires group, associate or institutional practice in general and pediatric surgery. FLEX. Completing two year residency in pediatric surgery at Montreal Children's Hospital. Passed Part I of ABS in November 1974. Complete resume on file at CSMS. Available July 1976.

Pediatrics: Board eligible. Group, associate or institutional practice desired. M.D. from Yale Medical School. Internship and residency at University of Rochester, Strong Memorial. Available June 1976. Wishes to return to Connecticut. Especially interested in ambulatory pediatrics. Harry Romanowitz, M.D., 111 University Park, Rochester, NY. 14620.

Pediatrics: Connecticut license. Desires group practice. Board eligible. 29 years of age. Completed residency at University of Ct. Resume on file at CSMS.

OB/GYN: Group or associate practice. FLEX. Board eligible. Trained in Korea. Residency at Wyckoff Hospital, Brooklyn. Hoon Yoo, M.D., 950 49th Street, Brooklyn, NY. 11219.

Ophthalmology: Board certified. FLEX. Completed fellowships at Brooklyn Eye and Ear Hospital and B.U. Medical Center. Husband is a urologist. Both wish to practice in same area. Meenakshi M. Desai, M.D., 254 Liberty Street, Danville, PA. 17821.

Ophthalmology: Board eligible. Diplomate of National Board. Available July 1976. New Jersey College of Medicine. Completing residency at Beth Israel Medical Center. Lawrence Frieman, M.D., 353 E. 17th Street, Apt. 20-F, NY, NY. 10003.



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Ophthalmology: Board eligible. FLEX. Available July 1976. Trained in intraocular lens implantation. Completing fellowship at University of Manitoba, Canada. Trained at the University of Louvain, Belgium. Beth Israel Hospital, N.Y.C., U.S. citizen. Joel M. Reisman, M.D., Dept. of Ophthalmology, H604, Health Science Center, 700 William Ave., Winnipeg, Manitoba, Canada R3E 0Z3.

General Surgery: Presently on active duty. Available fall of 1976. Board eligible. Trained in the Philippines and at Easton, Pennsylvania and in Virginia. Melvin Q. Antonio, M.D., 14 Inchcliffe Drive, Gales Ferry, CT. 06335.

General Surgery: Presently completing fellowship at Mt. Sinai Hospital in Hartford. Board eligible. Available in July 1976. Trained in Peru, Schenectady, N.Y. and at University of Connecticut. 33 years old. Group or associate practice desired. Alfredo A. Arbulu, M.D., 1471 Willard Avenue, Newington, CT. 06111.

General Pediatric Surgery: Available July 1976. 35 years old. Board eligible. Passed Part I—12/74. Completing training at the Hospital for Sick Children, Toronto. U.S. Citizen. Graduate of Columbia. M.D. from Boston Univ. Internship and residency at Mt. Sinai in N.Y.C. Michael A. Bleicher, M.D., 21 Glengrove Avenue, West, Toronto, Canada, M4R1N5.

General Surgery (Vascular): Completing training at N.Y. Medical College. Available July 1976. Board certified. 32 years old. William Doscher, M.D., 2500 Johnson Avenue, Riverdale, NY. 10463.

General Surgery: Presently in U.S. Army. Connecticut license. Available August 1976. Trained at Yale Medical School and Yale-New Haven Hospital. 32 years old. Board certified. Group or associate practice. Thomas C. Howard, M.D., 811 Dondee Drive, Manhattan, KA. 66502.

General Surgery: Interested in peripheral vascular surgery. Some pulmonary experience. Available now. FLEX. Board certified. American University of Beirut and West Virginia University. W.A. Khuri, M.D., 200 Washington Square, Richlands, VA. 24641.

General Surgery: Board certified. Desires group or associate practice. Available August 1976. 36 years old. Presently in practice. Completed training in the U.S. Navy. Sylvio G. Landry, M.D., 633 Bay Hills Drive, North, Arnold, MD. 21012.

General Surgery: Connecticut license. Available with short notice. Connecticut resident for twelve years. Trained at St. Raphael's and Fordham. Graduate of University of Santo Tomas, Philippines. Write CSMS for complete C.V.

General Surgery and Peripheral Vascular: Available now. FLEX. Board eligible. Taken Part I—A.B. of S. Completed training at Graduate Hospital, University of Pennsylvania. S. R. Bajina, M.D., Suite E. 1501, Park Towne East, 2200 Benjamin Franklin Parkway, Philadelphia, PA. 19130.

Surgery (Plastic): Available July 1976. Board eligible. Wishes to join another plastic surgeon or a group. Served two years in the U.S. Army. Plastic Surgery residency under Dr. Kelleher at Medical College of Ohio. Mark Handler, M.D., 2417 Hempstead Road, Toledo, O. 43606.

Urology: Board eligible. Available June 1976. 31 years old. M.D. from Georgetown. Residency at Beth Israel in N.Y.C. Solo, group or associate practice. Jonathan N. Goodson, M.D., 350 E. 17th Street, No. 12F, New York, NY. 10003.

Urology: Board eligible. Available July 1976. FLEX. McGill University and Montefiore Hospital in N.Y. C. Trained in renal trans-

plant and hemodialysis. 33 years old. Ek Seng Lou, M.D., 3411 Wayne Ave., No. 72, N.Y., NY. 10467.

Urology: Available immediately. FLEX from VT. Board eligible. Presently at Dalhousie University in Halifax, Nova Scotia. 37 years old. Resume on file at CSMS. A.B.M.

Urology: Available with reasonable notice. Board certified. Prefers group or partnership. Experienced in oncology and chemotherapy. 36 years old. Trained in Calcutta. Did internship at CT. Completed fellowship at Sloan-Kettering Cancer Center, N.Y.C. B. Ray, M.D., 16 W. 465 Mockingbird Lane, Hinsdale, IL. 60521.

Urology: Connecticut license. Board eligible. Wishes to return to Connecticut. Residency at Yale. 36 years old. Completed U.S. Army training. Richard S. Fightlin, M.D., 2989 Alta Laguna, Laguna Beach, CA.

Urology: Board eligible. 32 years old. Available July 1976. Completed 2 years in U.S. Navy. Dartmouth and Johns Hopkins trained. Group or associate practice. Resume available at CSMS. — M.J.B.

Urology: Pediatric and general urology. Available summer of 1976. Board eligible. Presently on active duty. Graduate of St. Louis University. Residency at University of So. Carolina and Mayo Clinic. Robert A. Fraser, M.D., 15 Rose Loop, Ft. Leavenworth, KA. 66027.

Urology: Available July 1976. Board eligible. Connecticut license #15126. Completed training in U.S. Navy. M.D. from George Washington University. Internship, residency and fellowship at Vanderbilt. Thomas C. McNamara, M.D., 401 Ocala Court North, Nashville, TE. 37211.

OPPORTUNITIES FOR PRACTICE

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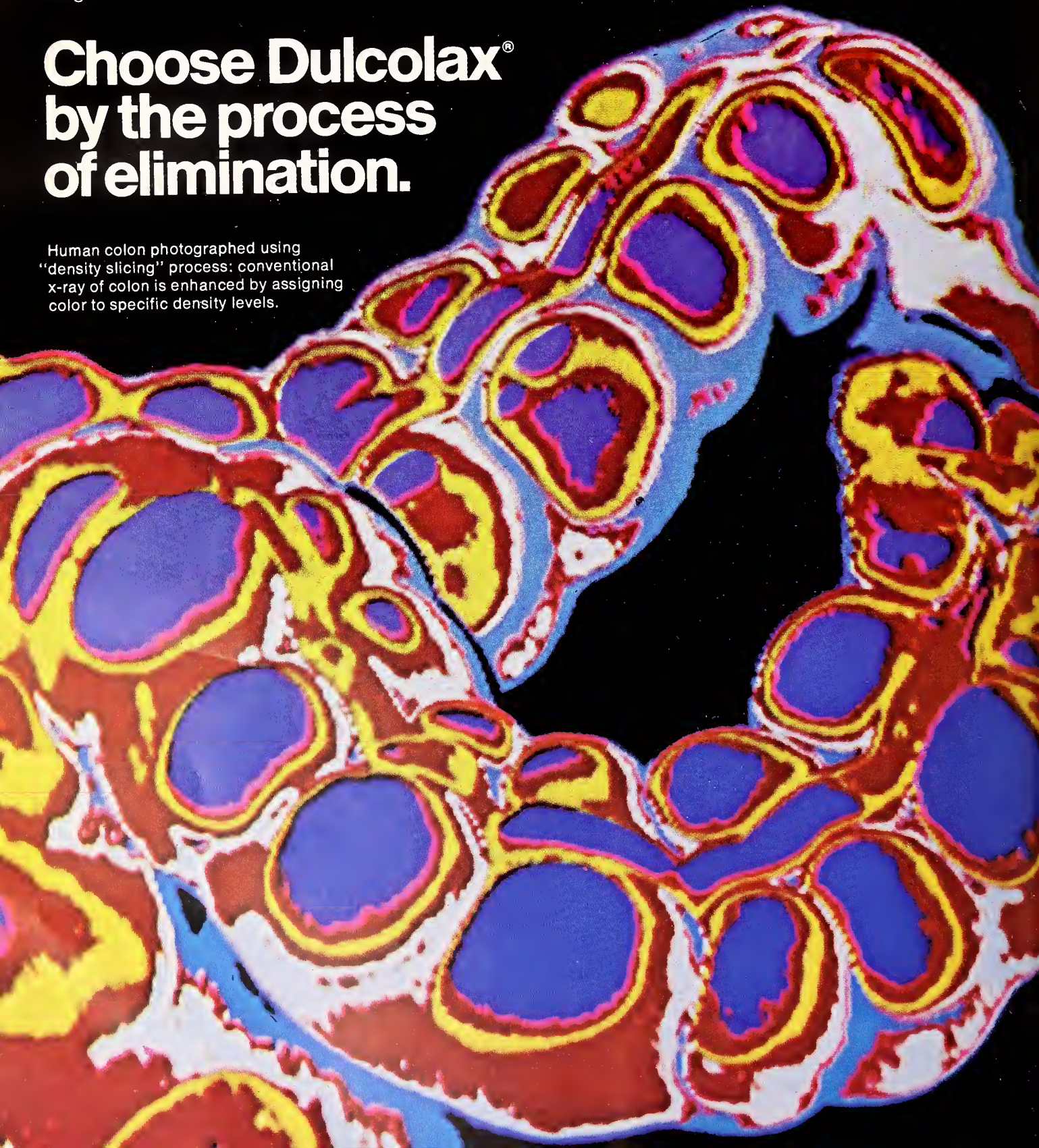


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Community Hospital Physician—Student and Teacher

Recent social, economic and political events have produced many changes in physician attitudes and patient care. The rapid pace of these changes has not as yet allowed a critical and unemotional judgement of their impact and worth. Some will eventually fall by the wayside, others will develop further in harmony with accepted practices of the past.

There is fortunately one area, however, that continues unaltered and in which physicians may still take pride. The derivation of the title "doctor" stems from the Latin word *docere*—to teach. Medical training fosters a lifelong interest and curiosity that often motivates a physician to exchange ideas with others. Such an opportunity presented itself to the staff at the Manchester Memorial Hospital when we were asked to be responsible for the scientific section of an issue of *Connecticut Medicine*. Limitations of space dictated that only a few could contribute, although many were equally capable and willing to do so.

In order to reflect a broad spectrum of ideas in the community practice of medicine, a variety of disciplines are represented rather than one particular field of interest. The first of six articles reviews the innovative development of progressive patient care that originated at Manchester Memorial Hospital eighteen years ago, with one of the planners of this concept weighing the merits and progress of the program as it evolved. Two well prepared presentations demonstrate that pertinent case reports continue to be a cornerstone of clinical teaching. A thoughtful study of patients with intestinal bypass procedures for the treatment of massive obesity illustrates how new ideas, often originating in large medical centers, can be translated into practice in a community hospital, while still being subjected to careful and critical analysis. An otolaryngologist and dentist combine their diagnostic and therapeutic skills in a discussion of the distressing problem of the painful temporo-mandibular joint. And finally, the last article describes a humanistic approach to hospital obstetrical practices

consistent with many of the social and individual needs of present-day society.

The medical staff at Manchester Memorial Hospital appreciates this opportunity to share its experiences with others. We are pleased to be able to participate in one of medicine's oldest and most enjoyable traditions—to teach, and in the process, to learn.

Martin Duke, M.D.,
Guest Editor



Figure 1

Manchester Memorial Hospital, founded 1919, as it appeared in the 1920's.

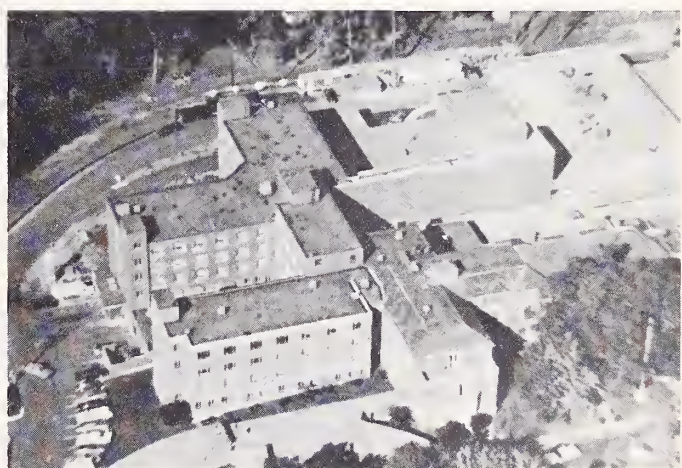


Figure 2

An aerial view of present-day Manchester Memorial Hospital reflecting its expansion in over 50 years of community service.

Eighteen Years of Progressive Patient Care at Manchester Memorial Hospital

Howard J. Lockward, M.D.

Progressive Patient Care (PPC) was conceived and developed at Manchester Memorial Hospital in 1957 under the guidance of Edward J. Thoms, administrator, Lane Giddings, pathologist, and the author, an internist. PPC is a concept of hospital organization based on patient need. The nursing units are developed, trained, staffed and equipped according to these needs. The organization of the hospital maintains a continuing contact with the other health organizations of the area in an attempt to provide a complete community service within the concept of the private practice of medicine.

During the past 18 years, the Manchester Memorial Hospital staff has been based on private practitioners functioning within their training or specialties. Until 1975 there was an intern training program but the changing times have brought that to a close. A part time director of medical education was added in 1963; a full time emergency service in 1969.

PPC originally consisted of three basic units—Special Care (SCU), Intermediate Care (ICU) and Self Service (SSU). The United States Department of Health, Education and Welfare was of great assistance in the initial development and evaluation of the program. Over the years, additional units have been developed by the staff physicians and nurses, with administration coordinating the total program. Support from the trustees and the community has provided new construction based on the concept of PPC with resultant improvement in its function. The present hospital has 337 beds of which 34 are newborn bassinets.

The Special Care Unit (SCU) consists of two 5-bed units, a cardiac unit of 5 beds, and a flexible zone of 22 beds. As the need seems to be evolving, a pulmonary care unit may soon appear. A larger number of nurses is concentrated in these areas than in other parts of the hospital in order to provide the additional care and support needed for these patients. It should be noted that highly specialized surgery such as cardiac or brain surgery is not performed at Manchester Memorial Hospital. These services are provided by nearby institutions. Admission to the SCU is made directly by a physician who telephones the hospital to schedule a patient, or a patient may be transferred to the unit at the request of the physician from another area of the hospital. There is never any delay on ad-

mission, although the procedure is subject to review by a committee of physicians and nurses established under the hospital staff organization. For the most part, this has provided adequate control to prevent staff abuse or overuse. During periods of increased need, such as epidemics, this committee has also helped maintain the function of the units by recommending transfer of patients as well as controlling admissions.

The flexible zone of SCU has been a great help in maintaining the function of the unit. It consists of 11 2-bed rooms and is provided with a higher level of nursing care than that in the remainder of the hospital. Its location allows rapid transfer of critically ill patients in either direction, i.e., back to the smaller SCU units or cardiac unit, or forward to Intermediate Care, as the condition dictates. It also acts as a buffer zone or holding area to permit transfer from the smaller subunits when Intermediate Care is full.

It is of interest that in 1960 the obstetrical service established an observation unit on its floor after having handled problem cases in the original Special Care Unit. The pediatricians added a SCU to their floor in 1964 after similar experiences.

In 1965, as a psychiatric service developed, a Closed Observation Unit (COU) of 6 beds was developed together with an 11-bed ambulatory inservice psychiatric unit. Admission to these units is made only by a psychiatrist. Admission of psychiatric patients to the general hospital is made by medical or surgical staff members with a psychiatrist in consultation.

Intermediate Care (ICU) remains much as the hospital was before any change was instituted. At first medical and surgical patients were together on all floors. As adequate numbers of patients with specialized problems appeared, a surgical ward was developed.

The serendipitous placement of three fire doors in the corridor between the OB unit and a medical ward allowed the interchanging of four semiprivate rooms back and forth between the OB and Medical units when the occupancy of the OB ward fell. This results in a considerable economic saving as well as providing a safety valve during periods of maximum hospital utilization.

Self Service (SSU) for fully ambulatory patients was originally developed in a house across the street from the hospital proper. Later, a 12-bed ward within the hospital was converted to the self service program. These patients remained dressed, were ambulatory,

DR. HOWARD J. LOCKWARD, Chairman, Department of Medicine, Manchester Memorial Hospital, Manchester.

went to the cafeteria for their meals, and went by themselves to the various departments of the hospital for diagnostic tests and treatment. Pre and post surgical patients, and patients convalescing from medical problems, have all been managed in this area. In 1966 the Miller Building, a 25-bed unit specially designed for this purpose, was constructed. A teaching area was included, and a diabetic training course for patients based on live-in experience has been developed. More recently a post-myocardial infarction teaching program—"heart care" classes—for patients and their families was started.

As an outgrowth of the economic pressure for more efficient hospital utilization, the surgical department developed a Short Term Stay (STS) unit of 5 beds. The patient, having had the appropriate examinations and tests performed prior to hospitalization, arrives at 6:30 a.m., is prepped, has simple surgical procedures performed in the operating room, recovers, and is discharged by mid afternoon.

The Continuation Care Unit (CCU) within the hospital developed in the form of a rehabilitation unit. It is interesting that this unit developed under the aegis of the nursing and physiotherapy staffs without much assistance from the physicians, there being no physiatrist on the staff. This unit functions well in relation to the Physiotherapy Department, handling patients with fractures, CVA's, and related problems.

Continuation care outside the hospital is handled in several ways. Social Service has established contact with nearby nursing homes arranging the transfer of patients from the hospital to facilitate continuous patient care. Home Care (HC) is centered around Social Service. A Home Care Coordinator visits the family and patient while in the hospital, and organizes the various services available in the community such as the visiting nurse and homemaker. Arrangements for use of special beds, wheelchairs, and other medical equipment are also coordinated through the Home Care Department. Follow-up at home by the physician and visiting nurse assures a continuous program of care. In the planning stage is a Meals on Wheels program whereby food will be prepared in the hospital kitchen for distribution by the local Meals on Wheels organization.

In brief, PPC is an organization of the hospital according to patient needs. The patient who is acutely, seriously ill goes to SCU, while the patient who is able to be up and about goes to Self Service, thus providing appropriate services for the situation rather than a constant service for all cases.

However, there is another advantage to this system. Since the various areas of the hospital are composed of multiple units, it becomes possible to add and subtract these subunits according to occupancy, thus sav-

ing personnel time. This results in a major saving of costs. In SCU, for example, there are two units of 5 beds plus a 5-bed cardiac unit and 22 flexible semiprivate beds. A review of 3 years, June 1971 to June 1974, reveals that one of the SCU subunits was closed an average of 12.4 days per month. During the summer vacations or holidays when surgery is slow, one subunit may be closed for several days to a week at a time.

As mentioned previously, the firedoors between obstetrics and a medical ward of ICU allow 4 or 8 beds to be swung back and forth, allowing expansion of one or the other unit as necessary. During the same three year period of June 1971 to June 1974, the ICU unit utilized 4 of these beds an average of 10.5 days per month and 8 beds for 2.5 days per month. With the present low occupancy of obstetrical beds, this represents a cross utilization of 62 bed days a month. During peak hospital occupancy, such as a flu epidemic, this section was swung almost continuously into ICU, helping to absorb the additional hospital load.

SSU is composed of 2 units, an original unit of 12 beds and a newly constructed unit of 25 beds. During the period of June 1971 to June 1974, the 12-bed unit was closed an average of 9.1 days per month. Once again this occurred during the holiday or vacation period, allowing a decrease in personnel when necessary.

The advantage of these arrangements is also from the financial side of the picture. Administration has set costs and charges at being equal. These are total costs other than fees to physicians, including room and board, lab, x-ray, physiotherapy, drugs, house-keeping, etc.

	1970	1971	1972	1973	1974	1975
Cost per day	70.64	79.79	93.08	100.16	106.28	152.76
Length of stay	6.92	6.82	6.79	6.48	6.15	6.01

The effect is to place Manchester Memorial Hospital in the lower 20 percent of the 29 hospitals reporting in Connecticut as far as average cost per day, and at the moment, the lowest average charge per patient per hospital stay. This does, I feel, indicate something about efficient utilization of the hospital.

In order to visualize how patients are managed under PPC, the problem of patients with cholecystectomy and myocardial infarction have been reviewed. From October 1974 to October 1975 there were 196 cholecystectomies performed for cholelithiasis at Manchester Memorial Hospital. The patients spent an average of 10.3 days per patient in the hospital. The following table gives the average number of days spent in the various hospital units by the patients. Since an individual patient moved through several

units, the total number of patients in the chart appears to be greater than the actual total of 196 patients. There were no hospital deaths in the series.

	SCU	FLEX	ICU	SSU	COU	TOTAL
Patients	123	137	146	157	1	196
Days stay	136	490	788	578	15	2025
Average days stay	1.1	3.6	5.4	3.7	15.0	10.3

During the same time period there were 193 patients admitted with the diagnosis of acute myocardial infarction. The patients were hospitalized for an average of 15.9 days. Eleven patients expired within the first 24 hours. The total mortality for this group of patients was 14.5%. The following table indicates the time periods spent by the patients in the various areas of the hospital.

	SCU	FLEX	ICU	SSU	REHAB	TOTAL
Patients	178	163	148	16	1	193
Days stay	679	1161	1154	71	1	3066
Average days stay	3.8	7.1	7.8	4.4	1.0	15.9

Problems are an inherent part of any human organization. Fortunately the problems have not been of serious consequence and indeed their resolution has often enhanced and improved the overall efficiency of the program. It has been necessary to improve communications in order to relay information regarding change of patient location in the hospital to the in-

involved services such as dietary, laboratory, x-ray, bookkeeping, pharmacy, etc. This has been accomplished by a computer based program. At times, patients have objected to moving from one unit to another. By explaining the benefits and reasons for the move, this has been overcome. Certain physicians, at times, have tended to over-utilize SCU or to place inappropriately selected patients in SSU. Nurses on the intermediate floors have at times objected to caring for very ill patients as they feel the services requested should be provided on SCU. Education of new personnel as they come to the hospital has helped alleviate the problem. Motion from unit to unit during periods of high occupancy has at times produced a back up on the flexible zone of SCU. None of the problems have been insurmountable.

The organization and functions of Manchester Memorial Hospital under Progressive Patient Care have been briefly reviewed. What has not been mentioned and is equally important is the tender loving care (TLC) and dedication to this program rendered by the entire staff. There must be laughter with tears or the pain becomes unbearable.

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Toxic Polyneuropathy Secondary to Methyl n-Butyl Ketone

C. W. Wickersham, III, M.D. and E. J. Fredericks, M.D.

Abstract—A case of industrial exposure to methyl n-butyl ketone resulted in a polyneuropathy. The case demonstrated similar but more advanced changes than those previously and correlates with experimental observations in animals exposed to MBK.

Introduction

Industrial exposure to toxic chemicals is not very common in the daily or routine practice of medicine. A subacute polyneuropathy was observed in a man exposed to methyl n-butyl ketone (MBK), a new chemical used as a solvent in a vinyl plastic printing firm. His neuropathy was the most severe of any case yet reported.

Case Report

An 18-year-old man worked as a printer's assistant. His job was to wash the printing screens with a solvent. He worked in a small room and although he had protective gloves and apron, he had extensive dermal and vapor contact with MBK. One month after he was employed, he noted brief tingling of both upper extremities. Within two weeks he developed progressive extremity weakness and numbness of the left heel.

Examination when he was first seen in August of 1973 revealed moderate weakness of all shoulder girdle and upper extremity muscles, and severe weakness of pelvic girdle and lower extremity muscles. Deep tendon reflexes were hypoactive or absent. Sensory examination was normal except for slight hypesthesia over the medial aspect of the left ankle.

Laboratory studies revealed a normal hematocrit, white blood count and differential, urinalysis, blood sugar, BUN, uric acid, SGOT, LDH, CPK, serum sodium, potassium, calcium, serum viral titer, heterophile agglutination, blood lead, chest x-ray and electrocardiogram. Cerebrospinal fluid revealed protein of 35 mg/100 ml. and glucose of 63 mg/100 ml. There were no white cells noted and the colloidal gold curve was normal. A repeat spinal fluid examination a month later was again normal.

Electromyography was first performed two weeks after originally seen, and demonstrated a few positive waves in lower extremity muscles. Maximum motor conduction velocities of four nerves were somewhat slow (Table 1).

In spite of no further exposure to MBK, weakness progressed over the next 2 months during which time he developed numbness of the hands and feet. At the end of this period proximal upper extremity strength began to improve.

Examination 5 months later demonstrated moderate weakness of proximal upper extremity muscles, severe weakness of muscles distal to both elbows and nearly complete paralysis of pelvic girdle and lower extremity muscles. Deep tendon reflexes were absent. Sensory examination was normal except for slight hypesthesia of both feet.

DR. C. W. WICKERSHAM, III, Department of Medicine, Manchester Memorial Hospital, Manchester., DR. E. J. FREDERICKS, Department of Neurology, Hartford Hospital, Hartford.

Table 1

MOTOR NERVE CONDUCTION STUDIES

Nerve	Normal	8/20/73	11/20/73	8/31/74	8/7/75
<i>Evoked muscle ampl. (mV)</i>					
L Peroneal	<3.5	0.6	No resp.	0.3	0.4
L Tibial	<4.5	0.8	0.4	0.4	0.4
L Median	<2.0	4.6	0.3	4.1	3.0
L Ulnar	<5.6	5.8	0.7	3.5	8.0
<i>Distal latency (msec)</i>					
L Peroneal	<6.8	8.3	—	7.6	8.7
L Tibial	<5.7	6.3	8.3	6.4	6.1
L Median	<4.6	4.3	5.8	5.0	4.0
L Ulnar	<4.2	3.7	3.5	3.1	3.3
<i>Conduction velocity (M/sec)</i>					
L Peroneal	>38	35	—	35	45
L Tibial	>41	36	34	39	40
L Median	>48	36	44	45	52
L Ulnar	>45	41	42	50	51

Electromyography demonstrated prominent fibrillation potentials and positive sharp waves in all affected muscles examined. Paraspinal muscles were normal. Low amplitude evoked intrinsic foot and hand muscle action potentials indicated severe distal axonal degeneration (Table 1). Evoked median and ulnar sensory action potentials were of reduced amplitude and increased duration (Table 2).

The patient received physical therapy. Sensory symptoms cleared and strength improved over the next six months so that he could ambulate with short-leg braces and Canadian canes.

Examination one year later revealed slight weakness of finger extensors and flexors, intrinsic hand muscles, pelvic girdle and proximal upper extremity muscles. There was moderate weakness of proximal lower extremity and calf muscles, and severe weakness of toe flexors and all muscles supplied by common peroneal nerves. Deep tendon reflexes were normal except for absent ankle jerks and nerve conduction studies are summarized in Tables 1 and 2.

Strength in the upper extremities returned to normal in 1½ years. After 2 years, there was still slight weakness of proximal lower extremity and calf muscles, severe weakness of toe flexors and complete paralysis of common peroneal-innervated muscles. Ankle jerks had returned to normal. Electromyographic findings were little changed and nerve conduction studies showed only slight further improvement (Tables 1 and 2).

Discussion

This case underscores a number of features observed in 86 recently reported cases of MBK polyneuropathy in a manufacturing plant in Ohio.¹ Our patient had the most exposure to MBK of any of his fellow employees. Fourteen fellow workers were examined and had no symptoms or signs of neuropathy. It was of interest to note the insidious onset of the

Table 2
SENSORY NERVE CONDUCTION STUDIES

Nerve	Amplitude of evoked sensory action potential (mV)				Distal sensory latency (msec) (Finger to wrist)			
	8/20/73	11/20/73	8/31/74	8/7/75	8/20/73	11/20/73	8/31/74	8/7/75
L Median	12	6	12	40	4.0	4.0	3.5	3.1
L Ulnar	6	3	7	8	3.4	3.4	3.4	3.0

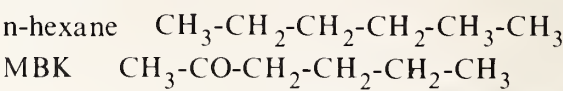
polyneuropathy, and its progression over a 2 month period, even after exposure had been stopped.

Although there was proximal muscle weakness, as in previously reported severe cases, the symmetrical motor deficits were greatest distally. There was symmetrical numbness of the hands and feet but minimal sensory loss. There was relative preservation of the deep tendon reflexes and lack of autonomic and cranial nerve dysfunction.

Electromyography, nerve conduction studies and the clinical course suggested that the primary pathologic process was one of axonal degeneration. Although nerve biopsy was not done in this case, studies in animals exposed to MBK have demonstrated axonal swelling, accumulated masses of neurofilaments, and paranodal thinning or denudation of myelin without frank segmental demyelination.^{2, 3}

The polyneuropathy secondary to n-hexane, a solvent used in the printing, furniture and leather industries, has similar clinical features. This is not

surprising considering the similarity of the two chemical structures:



All cases of MBK neuropathy subsequently improve and mildly affected cases recover completely. However, incomplete recovery would be anticipated when there is severe axonal degeneration as demonstrated in the present case.

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Vascular Liver Nodules Caused by an Islet Cell Tumor

Herbert L. Snyder, M.D. and Arnold L. Klipstein, M.D.

Abstract—A patient with an islet cell tumor of the pancreas and large vascular nodules in the liver diagnosed by angiography is presented. A discussion of islet cell tumor syndromes is included.

The pancreas remains a difficult organ to visualize, although important strides have been made with several modalities to unlock some of its secrets. The time honored barium studies, updated by hypotonic duodenography, continue to play a role. In addition, arteriography, endoscopic retrograde pancreatography, and isotopic and ultrasonographic scanning have more recently added a broader dimension for diagnostic investigation.

We recently had experience with a case that demonstrated interesting facets of a pancreatic islet cell tu-

mor with startling angiographic demonstrations of metastases which appear more vivid than any of the three cases we have been able to locate in the literature.^{1,2,3}

Case Report

S. W. presented with diabetes, a skin rash (Figure 1), and abdominal pain. At the age of 46 she was found to be diabetic. One year later, she developed a relapsing, generalized erythematous rash which was diagnosed as either pemphigus foliaceus or erythema multiforme. Two years later she developed abdominal pain; and in 1959 when she was 48 years old, an upper gastrointestinal series revealed duodenal ulcer disease, hypertrophic gastric folds, and a sprue-like pattern in the proximal small bowel. She was initially treated medically; but because of continued abdominal pain, recurrent vomiting, and anemia associated with occult blood in the stool, she had a subtotal gastrectomy with a Billroth 2 anastomosis. Ulcer symptoms recurred intermittently, and in March of 1968 she had a vagotomy because of the finding of a marginal ulcer on x-ray. Ulcer symptoms persisted postoperatively, and she was re-explored in June of 1968. At the time of surgery a marginal ulcer was found as well as a mass in the tail of the pancreas. A splenectomy, distal pancreatectomy, and further gastric resection was done leaving about one-third of the stomach. There was no gross liver abnormality. The removed gastric segment had no histologic abnormality.

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Figure 1
Skin Manifestations

The spleen showed congestion, and several lymph nodes which were removed were normal. The pancreas revealed a seven centimeter tumor that was felt pathologically to be anaplastic adenocarcinoma of the pancreas or a variant of an islet cell tumor.

The patient did fairly well for three and one-half years but then began to develop weight loss, chest and left shoulder pain. Gastrin levels of 3400 PG/ML and 3380 PG/ML (INTER SCIENCE INSTITUTE with normal up to 200 PG/ML) confirmed the diagnosis of the Zollinger-Ellison syndrome. In order to localize the residual tumor, a celiac angiogram was done and revealed innumerable highly vascular tumor nodules in the liver (Figures 2 & 3). No definite tumor was seen in the pancreas on the angiogram.

She gradually deteriorated and died at the age of 62. Autopsy revealed extensive neoplastic replacement of the liver (Figure 4). The histology of the tumor was the same as that seen in the sections of the original pancreatic tumor. Tumor was only found in the liver.

In review, this patient had an islet cell tumor which produced gastrin. She was a diabetic and had a skin lesion which was similar to the one described by Mathinson et al in their description of patients with glucagon-secreting tumors and which they called necrolytic migratory erythema.⁴ Unfortunately, no glucagon level was obtained for our patient.

Discussion

Recent biochemical methodology advances have alerted everyone to the wide spectrum of pancreatic islet cell tumors, and clinicians have grouped the various manifestations into specific syndromes known to be caused by particular hormone-secreting cells. Thus, we recognize beta cell insulinomas and non-beta cell gastrinomas, secretinomas, and glucagonomas among others—each producing a specific and recognizable syndrome. This entire group is now known to be part of a miscellaneous collection of cells producing polypeptide hormones. These cells have common cytochemical properties and the term APUD (*Amine Precursor Uptake and Decarboxylation*) has been applied.⁵ Included in this group of cells are the adrenal medullary chromaffin cells, the intestinal enterochromaffin cell, the pituitary corticotroph and melanotroph cells, the beta cell of the pancreas, and the calcitonin "C" cell of the thyroid. In addition,



Figure 2
Early arterial phase showing neo-vascularity and beginning nodular outlines.

the pancreatic islet alpha cells have been added to the series. The neural crest cells are considered probable precursors of all of these cells. The term Apudomas is used to encompass the specific tumors which may form, such as insulinoma, calcitonoma, glucagonoma and gastrinomas among the polypeptide producers and melanomas, pheochromacytomas, and oat cell tumors among the amine secreting groups. An individual patient with an Apudoma may have no abnormal endocrine manifestation or may have one or more of the recognized syndromes.

Apudomas, both primary and metastatic, are often quite vascular, and although the specific hormone type cannot be differentiated radiographically, pre-operative locations of primary and metastatic sites may be found by arteriography.

Olsson, in 1963, was the first person to describe the use of arteriography to diagnose an islet cell tumor.⁶ Selective celiac and superior mesenteric artery injections are required; and when the tumors are vascular, one will see, in the arterial phase, irregular small tumor vessels followed in the capillary and venous phases by the appearance of fairly well circumscribed densely stained nodules which may be up to several centimeters in diameter. Superselective studies may be

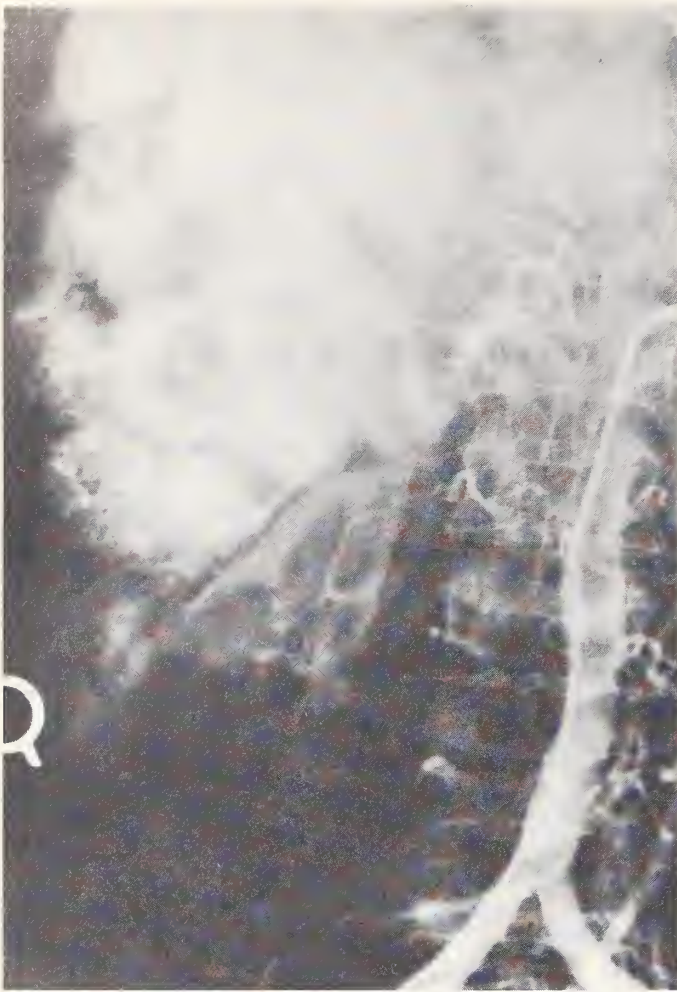


Figure 3

Late venous phase-arteriogram—marked nodularity—See how well these correspond to actual nodules in Fig. 4.

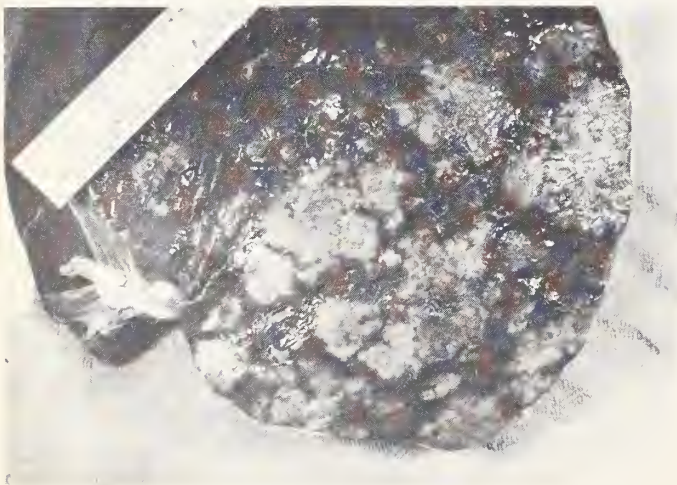


Figure 4

Gross appearance of liver nodules at autopsy

necessary to demonstrate smaller pancreatic lesions in questionable cases. When the tumors are hypovascular or avascular, arteriography will often not be diagnostic. Magnification and subtraction techniques can be utilized to improve visualization. One should not have trouble differentiating pancreatic carcinoma which rarely shows a tumor stain, cystadenomas which are irregular in their venous phase, and other lesions such as hemangiomas which are rare.^{2,7}

We had the opportunity to perform angiography on this patient with a Zollinger-Ellison Syndrome who also had manifestations of a glucagonoma. Since the metastatic deposits in the liver in this case are so striking and have not been seen in the literature in such definition, size, and number, we felt it desirable to publish this case study. The large and varying size, the dense and homogeneous stains, and the involvement of the entire liver are clearly demonstrated in the radiographs and autopsy specimen.

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Jejuno-Ileal By-pass Surgery in the Community Hospital

Merrill B. Rubinow, M.D.

The current literature abounds with articles concerning the treatment of morbid obesity by jejuno-ileal by-pass surgery. Most of these articles are laudatory in their discussion of the results of the procedure despite the many and frequently severe complications. A few of the presentations are frankly condemnatory. Several major institutions have abandoned the procedure completely because of bad surgical experience and severity of the complications, including several fatalities.

It is felt that somewhere between the two extremes there is a very definite place for this surgical procedure. It will be demonstrated that in the community hospital, under carefully monitored conditions, jejuno-ileal bypass surgery can be successfully performed and that the good results far outweigh the complications. It will also be shown that the complications can be reduced and in many cases possibly averted by careful maintenance of postoperative electrolyte balance and by the application of sound physiological therapeutic principles.

A brief review of the history and physiological indications for jejuno-ileal bypass is indicated. In 1954 Arnold Kremen and others¹ reported weight loss of controllable proportions following an extensive side-tracking procedure in the small intestine. Major loss of small intestinal digestive and absorptive power had previously been considered a surgical catastrophe, usually incompatible with normal life. Many experimental attempts followed, and Payne and DeWind reported a short-circuiting jejuno-colostomy as the beginning of a life-long surgical study of this approach to the problem of massive obesity.² The absorption of nutrients from the small intestine can be almost directly measured as the resultant of three factors: small bowel transit time, surface area of functioning small intestine, and the mixing of the intestinal chyme. Secondary factors which affect these three are the presence of the ileocecal valve and area, which can prolong transit time and the relative composition of the diet which primarily affects the mixing of the chyme. Iron is absorbed in the duodenum, and vitamin B12 and bile salts are absorbed in the terminal ileum. A consideration of these factors is paramount in fashioning a jejuno-ileal bypass which will affect weight loss but do it by a controllable malnutrition. It

must be realized that such a procedure is merely the construction of a planned "short bowel syndrome." Special mention must be made of the problems in fat absorption as insoluble calcium soaps are formed in patients with steatorrhea and large amounts of calcium may be lost. There may also be loss of the fat soluble vitamins.

With all of these problems and possible complications the indications for surgical treatment of obesity must be very compelling. It is recognized from life insurance statistics that the massively obese patient has a much shortened life span, usually due to degenerative diseases, arteriosclerotic cardiovascular disease, diabetes mellitus and hepatic cirrhosis. Strong patho-physiological indications for enforced weight loss are hypertensive cardiovascular disease, diabetes mellitus, stasis disease of the legs, arthritis of the knees and ankles, massive abdominal hernias, immobility due to other disease, and pulmonary insufficiency. Needless to say, no patient is ever subjected to surgical by-pass unless all other measures have failed. No patient is accepted for surgery who has not been through at least two successful weight loss regimens under rigid medical guidance, and who has not subsequently regained all of the weight previously lost. This is a common story. Other requisites are the presence of obesity for over five years, a status of at least 100 pounds overweight, or twice normal weight in very short patients. There must be evidence of physiological deterioration and the psychological indications must be strong with psychiatric consultation firmly recommended. As stated previously and most important is the indication that all medical means must have failed, and on more than one occasion.

The basic concept of the jejuno-ileal by-pass for morbid obesity is to create a permanent state of malnutrition which will lead to a satisfactory amount of weight loss. Initial surgical experimentation was with a jejuno-colostomy which proved to be unsatisfactory because of uncontrolled steatorrhea, electrolyte depletion and hepatic failure. The introduction of the jejuno-ileostomy by Payne and DeWind,³ by Morgan and Moore,⁴ and by Scott and Law⁵ showed the practicality of this procedure. It was quickly adopted by the surgical fraternity and subjected to extensive clinical application. The surgical anatomy consists of dividing the jejunum a stated number of centimeters from the ligament of Treitz and closing the distal portion of the jejunum. The latter is also folded back

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upon itself and sutured to the mesentery of the jejunum to prevent intussusception. The terminal ileum is then divided a stated number of centimeters from the ileo-cecal valve and the proximal jejunum is then anastomosed end-to-end to the distal ileum. The remaining proximal ileum is anastomosed to the transverse colon or to the sigmoid colon when this is possible. Early procedures² utilized the anastomosis of the proximal ileum to the ascending colon because of its surgical ease. However, this was abandoned when it was noted that it was possible for undigested food-stuffs to reflux back from the colon into the bypassed ileum and be absorbed.

As demonstrated, the amount of absorption of nutrients after jejuno-ileal by-pass will depend upon the amount of bowel surface area, the bowel transit time, and the nature of the intestinal chyme. In addition, the amount and nature of the functioning small intestine that remains after surgery is of utmost importance. Most studies tended to utilize 25 to 40 cm of jejunum and 10 to 25 cm of ileum. The routine of Braasch⁶ seemed to offer good control with 28 cm of jejunum and 28 cm of ileum. Because a good many of the reported difficulties were associated with poor vitamin B12 absorption, poor bile salt absorption, and intractable diarrhea due to steatorrhea, we favored the retention of the longer length of the ileum.

Based upon a careful review of previous work and a thorough survey of current recommendations, a protocol of 25 cm lengths of proximal jejunum and distal ileum was adopted and a series started at the Manchester Memorial Hospital with all surgeons who performed the procedure agreeing to utilize the same protocol. An end to end jejuno-ileostomy and end to side ileo-transverse colostomy was used in each instance. The results of this series will be presented only in an attempt to show that there is a place for this procedure in the community hospital, and in the hope that experimental surgeons and physiologists will be able to explain why diverse patients undergoing the same procedure should show such diverse results and hopefully help us to select the candidates more prone to have favorable results.

Since 1972, 47 patients have undergone jejuno-ileal by-pass surgery at the Manchester Memorial Hospital. Only those who satisfied the most rigid criteria and met all the indications previously noted were selected for surgery. A thorough complete pulmonary function study was performed on each patient and preoperative consultation was furnished by the departments of respiratory therapy and anesthesiology. A reminder is inserted that operative anesthesia must be carefully monitored with arterial blood gases to avoid catastrophic hypoxia during surgery. Most of the patients are also maintained on respirators during

the post-operative period until respiratory volume can be satisfactorily maintained without assistance. Complete chemical and electrolyte analysis was followed in all patients, and funds were made available for follow-up laboratory data so that the studies could be made in every instance. Early in the study the 5'-nucleotidase, folic acid level and vitamin B-12 level were followed, but after several years of normal findings these were omitted as routine studies. Chemical and hematological studies are carried out each three months for the first year and every six months thereafter. Patients are seen at least this often. In the 47 cases there were no operative deaths; one patient died at home one month after surgery under conditions suspicious of drug intoxication; chemical studies done one week prior to death had all been normal. One patient moved from the area but still sends in data regularly concerning her weight and chemical status. Therefore data are available on 46 patients and all have been included in the study.

Results

The average preoperative weight of the 47 patients was 286 lbs. (130 kg.) with a range of 202 to 460 lbs. The average height of the 42 female patients was 63.6 in. (161.5 cm.). The average height of the 5 male patients was 69.6 in. (176.8 cm.). At the end of the first year after surgery the average weight loss was 77 lbs. (35 kg.) with a range of 33 lbs. (15 kg.) to 140 lbs. (63.6 kg.). As has been noted by other authors patient satisfaction with the surgery was 43 out of 47 or 91%. Physician satisfaction with the operation was much more critical, 35 out of 47 or only 74%.

Six patients who were previously unemployable have secured gainful employment. One bedridden, partially paralyzed patient now gets up and around with the aid of a cane and is able to care for herself. Two patients badly hampered by severe degenerative arthritis of the knees are now fully mobile. A massive post-phlebotic ulceration was brought under control after 120 lbs. weight loss in a 370 lb. patient.

On the negative side, complications have been frequent and require close supervision of the patient. There were three minor wound infections and one major wound hematoma. There have been the other usual problems: four post-operative hernias, four patients have passed ureteral calculi, four patients have required hospital admission for parenteral electrolyte therapy, and two patients are being closely followed for possible hepatic damage. There have been no cases of intractable diarrhea or megacolon. No patients have as yet required restoration of intestinal continuity.

In summary, we believe that jejuno-ileal by-pass surgery should be considered as a last resort in mor-

bid obesity with physiological deterioration when all conservative measures have failed. It must never be taken casually but must always be preceded by extensive preoperative study and followed by rigid postoperative supervision. The poorest results are often obtained in the psychologically unstable because they may ignore instructions and advice. Under the best circumstances complications are frequent and must be carefully managed. This procedure can be safely done in a community hospital as long as rigid standards are established and maintained. The frequent excellent results are so outstanding that work in this field must be continued.

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Temporo-Mandibular Joint Dysfunction

Theodore Rosen, M.D. and Courtney H. Simpson, D.D.S.

A syndrome of ear and "sinus" symptoms dependent upon disturbed function of the temporo-mandibular joint was first presented in otolaryngologic literature by Costen¹ in 1934. The following symptoms were described: impaired hearing (continuous or intermittent), stuffy sensation in the ears, tinnitus, dull pain in the ears, dizziness, headache, and burning sensation of the tongue, throat and side of the nose. Since that time the frequency with which the diagnosis of "Costen's Syndrome" has been made has waxed and waned, varying with the success individuals have had with the dental treatment of such problems.

Costen attributed all of the symptoms to eustachian tube involvement resulting from relaxation of the pterygoid muscles and pressure on the chorda tympani nerve. Others² have related the symptoms to tensions, relaxations or disturbances of the muscles and ligaments directly associated with the temporo-mandibular joint. Imbalance of these muscles and ligaments then stimulated proprioceptive nerve fibers, with the resulting nerve reflexes precipitating the symptoms. These theories resulted in varied therapeutic approaches to the problem: intra-articular injections of various kinds, nerve resections, surgery to tighten "lax" ligaments, and even condylectomy.

In light of these theories, it is interesting to note the anatomy of the temporo-mandibular joint as described by Cunningham³—"In general the articular

surface of the head of the mandible is cylindrical, having its long axis directed from the medial side laterally and forward. On the other hand the mandibular fossa is concavo-convex from behind forwards. The articular surface of the bones is clothed with hyaline encrusting cartilage while the articular cavity is divided into a superior and inferior part by a disc of fibro-cartilage. This cartilage is widest in the transverse direction, thicker posteriorly than anteriorly and thinnest towards the center, *where it may be perforated thus . . . the cavity divided by the disc may become one continuous cavity.*"⁴ "The petro-tympanic fissure . . . is the narrow slit between the mandibular fossa and the upper edge of the tympanic plate. The lateral part of the petro-tympanic fissure may be obliterated by fusion of the tympanic plate with the back of the post glenoid tubercle . . . *The middle part leads into the tympanic cavity*, the anterior process of the malleus is stuck in it, and the *tympanic branch of the middle meningeal artery* passes upward through it. The *chorda tympani nerve*, (italics ours) having traversed the tympanic cavity, enters the medial part of the fissure, grooving the spine of the sphenoid and joins the lingual nerve below the foramen ovale."

Thus we have the three components that can produce the aural and associated symptoms of "Costen's Syndrome,"—all related to their presence in the medial portion of the petro-tympanic fissure:

- (1) The anterior process of the malleus
- (2) The tympanic branch of the middle meningeal artery with its surrounding sympathetic fibers from the carotid plexus and

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(3) The chorda tympani nerve.

To these we must also add the possibility of a perforated articular disc, individual variability as to the width of the petro-tympanic fissure, and individual variability as to the thickness or thinness of the tympanic plate. Constant or intermittent pressure on the anterior process of the malleus can immobilize the malleus and the ossicular chain, and transmit trauma to the middle ear, resulting in stuffiness, partial deafness, tinnitus, dizziness and dull pain in the ears. Similar pressure on the chorda tympani can produce lingual symptoms. Pressure on the tympanic branch of the middle meningeal artery with its associated nerve plexus can produce headache, dizziness, tinnitus, fullness and radiating pains.

The diagnosis of temporomandibular joint dysfunction should be considered whenever there is inadequate aural pathology to explain aural symptoms. A history of recent or past dental work (fillings, dentures, bridges, or orthodontia) may be a suggestive clue, especially when it can be related to the time of onset of symptoms. There may be a history of bruxism (grinding of the teeth at night). Pain in the temporomandibular joint may be present or it may be elicited by inserting the little finger of each hand behind the condyle into each external auditory meatus, and held in that position as the patient opens and closes his mouth.

At other times the diagnosis is more obscure and is made by exclusion. The tympanic membrane is normal. Eustachian tube function is normal. X-ray studies show no evidence of joint disease or abnormality. We have never found x-ray studies to be of any value in diagnosing temporomandibular joint dysfunction. Aural symptoms without evidence of aural pathology, especially in thin-boned individuals (83% of cases found in females),⁵ warrants a judicious review of the occlusion by a dentist who is aware of and attuned to temporomandibular joint dysfunction. Any other type of dental examination is of no value.

Dental treatment consists of establishing proper occlusion of the upper and lower teeth so that the mandibular condyle does not impinge on the petro-tympanic fissure area. Premature contacts must be eliminated. Restorative dentistry may be necessary. Essentially the dentist seeks a balanced contact of all teeth to eliminate shifting of the mandible as it closes toward the maxilla. At times a definite diagnosis of premature contacts cannot be made. The dentist may then place a removable plastic bite jig (Lucia jig) over the upper anterior teeth to prevent the posterior teeth from making contact. This is worn for 3-4 hours or more, so that the muscles of the mastication may relax. Then with the jig removed, and having the patient close his bite slowly and lightly, the dentist is

better able to observe premature contacts, hits and slides, or shifting of the mandible. Often such adjustments result in prompt relief of symptoms.

Case Presentations

Case 1. (A.T.): This 24-year-old female was referred by her family physician because of intermittent pain and a "bubble" in her left ear. This was most marked when lying down. There was a past history of orthodontia as a child.

Examination of the ears and eustachian tubes showed normal function. Both temporomandibular joints were loose and were tender on palpation. Finger test was positive for pain.

She was referred to a dentist for temporomandibular joint evaluation. Patient was given a Lucia jig for overnight use. The next day teeth on the left side of the mouth were found not making contact. Occlusal adjustments were then made on the right side until contact on the left side was obtained. Symptoms were completely relieved.

Case 2. (P.M.): This 21-year-old female complained of pain in the right ear with associated "buzzing" and dizziness. The right tympanic membrane was retracted, but no fluid was noted. A diagnosis of right eustachian tube obstruction was made. The patient was given decongestants and advised to use the Valsalva technique.

The patient returned in one week with no improvement of symptoms. The right tympanic membrane moved well with the pneumatic otoscope and with the Valsalva technique. Finger test of the temporomandibular joints was positive for pain. She had several teeth missing and was referred to a dentist (C.S.) for evaluation.

Several lower molar teeth were absent bilaterally. The bite was overclosed. A new partial denture was made, restoring the normal position of the mandible. The patient became asymptomatic.

Case 3. (H.D.): This 53-year-old female complained of pain in the left ear. She stated that it "hurt to press the left side of the face." Examination revealed slight infection of the left tympanic membrane. Medical therapy was prescribed.

The patient returned six months later with the same complaints of left sided pain and tenderness. The tympanic membranes appeared normal. Eustachian tube function was normal. Since the patient had lower teeth missing, she was referred to a dentist (C.S.) for evaluation of the temporomandibular joints.

The patient was wearing a full upper denture. The lower molars were missing. A Lucia jig was inserted for overnight wear. The patient obtained complete relief of symptoms. A new upper denture and a partial lower denture were then constructed. The patient has maintained complete relief.

Case 4. (S.M.): This 41-year-old female had pain on the left side of her face and head for 5-6 weeks. She had dizziness and ringing in the left ear, associated at times with slight nausea. She had been treated with antihistamines and decongestants without relief. She had a diagnosis of "labyrinthitis" made 13 years ago and had had intermittent therapy for it. Two months prior to this visit she fell, sustaining abrasions to the skin of face and injury to the mandible, but no fractures.

Examination of the ears and eustachian tube function were normal. Since no pathological findings were found and the patient obviously had considerable dental work, she was referred for temporomandibular joint evaluation.

The patient had a fixed upper bridge from 2nd molar to 2nd molar and a fixed bridge on each lower quadrant. She was given a Lucia jig for overnight wear and returned with complete relief of symptoms. Examination then revealed that the patient was making contact only in the right cuspid area. The condyle was dropped and the mandible had shifted to the right. The bridges were then ground

down to establish new occlusal relationship and the symptoms completely disappeared.

Case 5. (F.U.): This 53-year-old female complained of decreased hearing in the right ear. She stated that for the past 25 years she had an ache behind the right ear, the pain radiating to the back of the head. This symptom was usually most marked in the morning. The right ear felt full, and at times she had transient periods of vertigo. She had seen many physicians for this problem and had been on anti-depressant drugs. She had also been under psychiatric care and had had "shock" therapy.

Examination of the tympanic membranes and eustachian tube function were completely normal. An audiogram showed a flat curve of 25-30 db. loss by air conduction and bone conduction bilaterally. The finger test for temporo-mandibular pain was positive. She had an obvious poor bite and was referred for dental evaluation.

Dental examination revealed several missing teeth, two partial dentures and a shifting and dropping of the left side of the mandible.

The patient was given a Lucia jig for one week. She returned with complete relief of all symptoms. Occlusion was then rebuilt to correct the mandibular shift. The patient has remained happy and asymptomatic.

Summary

We have presented the temporo-mandibular joint dysfunction syndrome, basing the symptomology on involvement of the structures passing through the middle portion of the petro-tympanic fissure. Dental therapy to correct the bite and relieve the pressure on that area eliminates the aural and related symptoms. We have presented five cases to illustrate the problem and the treatment.

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The Home-like Labor-Delivery Room

Philip E. Sumner, M.D., John P. Wheeler, M.D. and Samuel G. Smith, M.D.

We who deal in obstetrics have a unique and privileged vocation. Since childbirth is the means whereby society perpetuates itself, it has to be one of the most important of human events. Anything we can do to make childbirth safer or more meaningful should be given the highest priority and traditional techniques and policies should be modified accordingly. How we define childbirth will determine how we manage it. For most patients childbirth may be defined as a normal physiological event. Occasionally it is a pathological event requiring medical or surgical intervention and for this reason hospital delivery is mandatory. While some may argue that home delivery offers a more joyous, meaningful milieu, it can never provide adequate medical safety in event of complication. A modern maternity unit should offer medical safety *and* an emotionally meaningful ambience. Up to the present time we obstetricians have been properly preoccupied with the morbid aspects of childbirth and the significant lowering of the perinatal mortality sta-

tistics attest to our success in this area. For example, in 1900 the Connecticut maternal mortality rate was 55/10,000 live births which was reduced to 1/10,000 in 1973. In the same period of time fetal mortality declined from 40/1000 live births to 10/1000.¹ Thus our specialty has achieved a remarkable reduction in perinatal morbidity/mortality, an accomplishment of which we can be justly proud. Yet too often our maternity units reflect this preoccupation with morbidity. We need now to stand back, take a new look at our facilities and rearrange our priorities to emphasize the more positive, joyous aspects of childbirth as well. An austere atmosphere tends to increase anxiety which complicates childbirth management; a warm and friendly atmosphere tends to reduce anxiety which simplifies management. All patients benefit from a reassuring atmosphere and the more high-risk the patient the more important a positive ambience! Medical aspects such as fetal monitoring, I.V. therapy, etc., should be low profile and not imply morbidity. The era of twilight sleep and the passive parturient is ending and new policies need to be established to meet the physical and emotional needs of the conscious active parturient.

Changing Obstetrical Trends

The increasing popularity of regional anesthesia and the rapid growth of the prepared childbirth movement attest to the fact that a growing number of patients want to take an active part and savor to the fullest the work, the struggle, the triumph and the

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miracle of birth.^{2,3,4,5,6} The awake and aware parturient has different needs from her medicated, passive sister. Bare walls, drab decor, shared labor rooms, glaring lights, intermittent nursing support, excluded husbands and multiple transfers are inappropriate for the conscious parturient. The maternity unit should be cheery and colorful with wallpaper, pictures, drapes and background music. An efficient labor-delivery bed can simplify childbirth without compromising safety.

The concept of a labor-delivery bed is not new and in fact is the custom in most countries.⁷ It gives recognition to the fact that childbirth is a continuous process and is appropriate for all patients having normal labor and delivering awake. It dignifies childbirth, is compatible with modern obstetrical techniques and can even enhance safety since the situation is more controlled, routine transfers (and stretcher precips) are eliminated, nurses backs are spared, maternal and fetal signs can be observed uninterruptedly, I.V. fluids are less cumbersome and the fetal monitor when indicated can record uninterruptedly until delivery. When delivery is impending, the patient merely places her feet in stirrups, and the infant delivered forthwith. An operating room should be nearby in case of complication. When delivery is completed the mother and father may remain in place and celebrate the birth appropriately. The baby should remain with the parents to encourage "bonding" of the new family unit. Dr. Marshall Klaus has statistically demonstrated stronger positive parenting attitudes among parents who actively shared the childbirth experience and had extended early contact with the newborn.⁸

Materials and Methods

In 1969 Manchester Memorial Hospital established a "Lamaze Labor-Delivery Room" in which the patient trained in psychoprophylaxis (the Lamaze Method) would both labor and deliver. The room was colorfully decorated with washable wallpaper, drapes, pictures and mobiles, and was provided with a large delivery mirror, telephone, AM-FM radio and Polaroid camera. A Lamaze Log recorded the details of each delivery. A French labor-delivery bed was installed which is comfortable for labor and sturdy for delivery.⁹ Also necessary is a Kreizelman incubator and a Castle lamp installed on the wall, along with appropriate suction and oxygen. In order to provide adequate nursing support we adopted the French monitrice concept to complement the regular nursing staff.

The monitrice (a French term for an obstetrical nurse specifically trained in the Lamaze method) has

the responsibility of running the room and providing uninterrupted support to the parturient (and husband) during labor and delivery. She often is an

A.S.P.O.¹⁰ certified childbirth educator as well. She is similar to a private duty nurse in that her sole responsibility is to the one patient; she is called when needed and remains with the patient until one hour post-partum. She bills the patient directly for her services and is not a hospital employee.¹¹ In our experience the monitrice concept is useful to assure continuous, knowledgeable one-to-one support which is necessary if medication and anesthesia are to be minimized. A flexible "on call" monitrice program helps resolve the constant dilemma of "feast or famine" staffing of the maternity unit.

For delivery the patient's feet are placed in stirrups at hip level, the lower half of the table is pushed into the upper half, the instrument table wheeled in and the patient draped in the usual sterile manner. Paracervical, pudendal and local blocks and episiotomy are used only when necessary. Both mother and father can observe delivery through a large mirror at the foot of the bed. When the baby is delivered the overhead lights are dimmed and silver nitrate is withheld to permit the baby and parents to establish eye-to-eye contact and a strong bonding relationship at the earliest possible moment. The mother may hold the baby on her abdomen and the cord is not clamped until pulsation has ceased. Respiration is spontaneous and the baby rarely requires vigorous stimulation.¹² After brief aspiration of mucous from the pharynx and esophagus the baby is wrapped in a warm thermal blanket and held by both mother and father and nursed if desired. The Castle lamp provides adequate illumination for episiotomy repair. Following delivery the bed is pulled out, patient's legs are lowered, a Polaroid picture of the new family unit is taken, phone calls are made and a champagne toast may be offered. While the use of this room is limited to patients trained in psychoprophylaxis the enthusiasm and growth of the program was such that in 1973 we opened a second similarly equipped room in which any patient "prepared" or not may both labor and deliver at the discretion of the obstetrician. We are now in the process of establishing a third labor-delivery room.

A total of 1600 patients have been successfully managed in these rooms over the past six years. A paper published earlier described our first five years experience.¹³ This paper will review our most recent eighteen months experience.

RESULTS:
461 LAMAZE DELIVERIES MMH
(1 Jan. 1974 - 30 June 1975)

I. 253 Nulliparas

A. Monitrice	224	89%
B. Labor		
Medication	96	38%
Paracervical Block	171	71%
C. Delivery		
Pudendal Block	131	52%
Local	101	40%
Spinal	3	1%
General	17	7%
None	1	.4%
D. Type Delivery		
Spontaneous	150	59%
Low Forceps	79	31%
Mid Forceps	5	2%
C-section	14	6%
Breech	5	2%
E. Where Delivered		
Lamaze room	232	92%
D.R.	6	2%
O.R.	15	6%

II. 208 Multiparas

A. Monitrice	178	86%
B. Labor		
Medication	19	9%
Paracervical Block	107	52%
C. Delivery		
Pudendal Block	76	37%
Local	107	51%
Spinal	0	0%
General	2	1%
None	23	11%
D. Type Delivery		
Spontaneous	184	88%
Low Forceps	18	9%
Mid Forceps	1	.5%
C-section	2	1%
Breech	3	1%
E. Where Delivered		
Lamaze room	204	98%
D.R.	2	1%
O.R.	2	1%

Transfer from Lamaze Room to D.R.	Nulliparas	Multiparas
? need for gen. anes. (didn't)	2	0
need for gen. anes. (did)	3	0
need for saddle block	1	0
retained placenta (post-partum)	1	0
repair laceration (post-partum)	1	0
breech	0	2

Maternal Complications	17/461 = 3.7%
pre-eclampsia	3
premature rupt. of membranes	3
ulcerative colitis	1
post partum pneumonia	1
prelapsed uterus	1
sulcus laceration	1

FUO	1
retained placenta	3
post partum bleeding	1
severe pre-eclampsia	1
abrutio placenta	1

Fetal Complications	16/461 = 3.5%
stillborn	1
aspiration pneumonitis	1
skull fracture @ convulsions	1
small for dates	1
under 5½ lbs.	10
depressed Apgar	2

Discussion

It will be noted that the great majority of patients had the benefit of monitrice support and that medication and anesthesia was used selectively and only when indicated. Paracervical and pudental blocks provide excellent complementary anesthetic techniques for prepared childbirth. 59% of nulliparas and 88% of multiparas had spontaneous deliveries and both low and mid forceps were used when indicated. 14 (6%) of the nulliparas and 2 (1%) of the multiparas were transferred to the operating room for cesarean section and only 6 (2%) nulliparas and 2 (1%) multiparas were transferred from the labor-delivery room to the regular delivery room for vaginal delivery. Therefore, it can be stated that once admitted to the labor-delivery room a nullipara will deliver in place 92% of the time and a multipara 98% of the time, thus simplifying and expediting childbirth for the great majority of women. Because we adhere to meticulous sterile technique, infection is not a problem. The low incidence of complications and the fact that they are unrelated to the location of delivery confirms the validity of the labor-delivery bed concept. While it is not easy to measure the emotional impact of managing childbirth in a home-like labor-delivery room, it can be stated that the program has been accepted with great enthusiasm by both patients and obstetrical personnel.

Conclusion

Childbirth is both a normal physiological event and a creative, joyous experience. Its proper management is an art as well as a science. Obstetrical preoccupation with the medical and pathological aspects of parturition has reduced perinatal morbidity/mortality but often produces a sterile, dehumanized atmosphere. This study of 461 prepared childbirth patients demonstrates that a home-like labor-delivery room simplifies the management of childbirth without compromising safety. It is suggested that a modern maternity unit containing a number of private, home-like

fully equipped labor-delivery rooms in which 92% of nulliparas and 98% of multiparas will both labor and deliver represents a happy compromise between the austerity of the conventional maternity unit and the needless risks of a home delivery and can enrich, individualize and dignify the childbirth experience.

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Malpractice and Manslaughter: The Case of Edwin Martin Van Butchell

Thomas R. Forbes, Ph.D.

Edwin Martin Van Butchell, like his father, Martin Van Butchell, practiced rectal surgery in early nineteenth century London without having been licensed or admitted to membership of the Royal College of Surgeons of London. The father, of whom more later, had been a successful pupil of John Hunter, but the *Dictionary of National Biography*¹ refers to the elder Van Butchell as an “empiric,” that is, a charlatan who relied only on experience and observation. At the son’s trial at the Old Bailey it was asserted that he “was not a legally qualified practitioner.” However, one of his barristers asserted that he had “proof of Mr. Van Butchell’s being a regularly educated surgeon.”²

On Sunday morning, 10 May 1829, one William Archer, a silk manufacturer, after asking the way of his brother and next door neighbor, Emerson Archer, journeyed from his home in the Parish of St. Luke Old Street, just north of the City of London, to the house of Edwin Martin Van Butchell, aged 50, in Golden Square, Soho, a distance of two miles or a little more.* William Archer’s wife had died not long before, and he had been depressed and ill. He still was not well, but recently “was in better health and spirits than he had been for months previously and express’d himself to that effect.”³ However, William suffered from a rectal ailment; he had not told his brother about this. Presumably it was because of this difficulty that he visited Van Butchell, who had treated many persons with rectal complaints, rather than his own surgeon, Mr. Eusebius Arthur Lloyd of Frederic Place, Old Jewry. Lloyd was legally qualified to practice and was a Fellow of the Royal College of Surgeons. He had seen William Archer three or four times during the past month for an unspecified reason. There is no indication in the record that Lloyd sent the patient to Van Butchell.

The latter examined Archer, told him that he had a rectal stricture, and thrust what was later described as a

straight ivory rod about eight inches long into Archer’s rectum. The instrument “met with great resistance but at length passed the obstruction. Deced [deceased] said, ‘I felt the obstruction give way and at that moment experienced great pain but beyond that point the Instrument passed easily.’”² Archer, feeling very faint, walked to the nearest coach stand and was driven home, where he collapsed “and was seized with a shivering.” This was between 1 and 2 P.M. He attempted to eat dinner but by 5 P.M. was so ill that he was put to bed.

Mr. Lloyd, Archer’s usual doctor, was sent for and arrived about 8. He found the patient “in a state of great depression of spirits and strength” and complaining of lower abdominal pain. Lloyd treated Archer during the next six days. “His examination did not lead him to think that there was general peritoneum inflammation.”² Lloyd drew 16 or 18 ounces of blood on 12 May and bled Archer again on 13 May. He also had leeches applied. The patient died on the evening of Saturday, 16 May.

The next day William Linsley, Archer’s father-in-law, went to see Van Butchell. In response to a question, the empiric asserted that Archer did not have a fistula. Linsley then said that the patient was very ill and wished to see Van Butchell. The latter answered that he would come as soon as Archer’s condition improved. At this point Linsley called in a friend of his and Archer’s, Joseph Taverner, presumably to act as a witness. Van Butchell showed them the ivory rod and confirmed that he had performed the operation. Linsley then informed Van Butchell that his patient had died and that Linsley felt the empiric was responsible.

On that same evening of 16 May Mr. Lloyd examined Archer’s body. He found that

the abdomen was greatly distended and on opening it it proved to be in consequence of the Intestines being full of Air the contents of the Abdomen altog. ^r [altogether] exhibited appearances of Inflammation and part of the Intestines were found adherent to the rectum On separating the adherent part an opening was discovered in the Rectum about 4 Inches up which evidently had been occasioned by an Instrument having been passed up I have no doubt that the cause of his Death was the injury done to his Intestines. The direction of the Intestine is

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*The following account is drawn from official records^{3,4,5} and published accounts^{2,6} of the inquest on Archer’s death and of the trial of Van Butchell. Transcripts of Crown-copyright records in the Greater London Records Office (Middlesex Records) appear by permission of H. M. Stationery Office.

such that I am certain it is impossible for a straight Instrument of 8 Inches in length to pass along it without inflicting serious injury ³

A second surgeon, John Smith, who had attended the autopsy confirmed Lloyd's opinion.

On Wednesday, 20 May, an inquest into Archer's death was conducted by John Wright Unwin, coroner, at a public house, The Prince of Wales, in St. Luke's parish.* Van Butchell, identified in the inquisition as "late of Broad Street Golden Square . . . Gentleman," unfortunately was not present. The jury, after listening to the depositions of Linsley, Taverner, Lloyd, Smith, and Emerson Archer, decided that Van Butchell had inflicted "a mortal injury" with the ivory instrument, causing Archer's death, and that Van Butchell "feloniously did kill and slay" Archer.⁴ Upon the presentment of the coroner's jury, the surgeon was indicted for manslaughter. For some reason the indictment identified him as a "Labourer."⁵ Perhaps this was an error, or perhaps it was intended to indicate that he was not regarded as a professional man.

As was customary, the coroner's jury put a price, in this case one penny, on the instrument that "moved to the death" of the victim. Such an object was a *deodand*, literally something that should be given to God. In medieval days the lethal object—a weapon, the wheel of a cart, a falling slate, or whatever—or, more often, a sum equal to the assessed value, was at first given to the Church. Soon, however, the deodand became a perquisite of the Crown, supposedly for pious uses. It was one of the coroner's duties to see that the value of the deodand was set by the jury and was collected.^{7,8}

The coroner's indictment having been issued, Van Butchell was taken into custody on the day of the inquest and was lodged in Newgate Prison. Subsequently he was released on bail.⁹⁻¹¹

Archer's funeral took place on Friday, 22 May. A few hours before, two men, one of them Van Butchell's attorney, asked to see the body. Permission, however, was refused because the coffin had been closed and because the men did not bring the necessary authorization from the coroner. The perforated rectum had in any case been removed by Lloyd during the autopsy.

Van Butchell's trial for manslaughter took place at the Old Bailey on Thursday, 11 June 1829, before Mr. Baron Hullock and Mr. Justice Littledale, both distinguished jurists. Sir John Hullock was noted for his legal skill and for his humanity.¹² Sir Joseph Littledale, learned and acute, was equally respected.¹³ We know nothing about Messrs. Brodrick and Carrington, the

lawyers for the defense, but John Adolphus,* who stated the case for the prosecution, had a formidable reputation as an expert in criminal law.¹⁴ The Van Butchell case "excited great interest, and the Court was crowded to excess at an early hour."²

The *London Medical Gazette*, which covered the trial in some detail, succinctly explained the issues. Manslaughter under British law could be either voluntary or involuntary; in the latter case, the offense must have occurred during commission of an "unlawful act." Conviction of this felony carried the penalty of branding in the hand and forfeiture of all goods and chattels. If a physician or surgeon gave a patient a remedy, or performed an operation, and the patient died as a result, had the doctor performed an unlawful act? Blackstone said no.

If a physician or surgeon gives his patient a potion or plaister to cure him, which, contrary to expectation, kills him, *this is neither murder nor manslaughter, but misadventure*, and he shall not be punished criminally, however, liable he might have been formerly to a civil action for neglect or ignorance.

But what if the offender were an empiric? Blackstone continued,

But it hath been holden, that if it be not a *regular* physician or surgeon who administers the medicine, or performs the operation, it is manslaughter at least. Yet Sir M. Hale [Sir Matthew Hale, 1609-1676] very justly questions the law of this determination, since physic and salves were in use before learned physicians and surgeons; wherefore he treats this doctrine as apocryphal.

The essential facts presented at the trial have already been reported. Arthur Eusebius Lloyd testified at length and expressed the opinion that in the rectum "no properly-educated surgeon would use a straight unyielding" instrument like Van Butchell's ivory rod. Shortly thereafter, Mr. Baron Hullock having asked the prosecutor if he had any stronger evidence and Mr. Adolphus having answered in the negative, Justice Hullock said that

if that were so, in his opinion there was no case made out. The evidence which had been given could not support the charge of manslaughter . . . if such an indictment could be supported, in the total absence of all evidence of want of skill or neglect, because an operation failed, the consequences would be most serious, whether the operation was performed by a regular or an irregular surgeon; and surely it would be most unjust to prosecute a man who might be a skilful and clever

*In most parishes, the only places large enough to accommodate the coroner's court were the vestry room of a church or a parlor in a public house.

*Biographical and other details suggest that the prosecutor was indeed John Adolphus the elder (1768-1845) and not his son, John Leicester Adolphus.

practitioner, upon the unsuccessful result of a dangerous operation, because he was not licensed, and not fortunate enough to possess the sanction and authority of a certain body in this town.*

Justice Hullock also stated that there was no previous instance on record of the trial of either a regular or irregular practitioner “for manslaughter in consequence of real or alleged bad practice.”

The jury, as directed by His Lordship, returned a verdict of *Not Guilty*.²

The *London Medical Gazette* agreed with the opinion of Justice Hullock and pointed out that, while in London legal steps could, it was believed, be taken against a physician for practicing without a license,

we are not aware that the College of Surgeons have the power of prohibiting any one from practising, or interfering with him: so that no one practising surgery according to the best of his skill, is committing an “unlawful act,” and therefore he cannot be guilty of manslaughter.

Acquittal, said the *Gazette*, “was not only an act of justice to the individual immediately concerned, but to the profession in general.” A verdict of guilty would have rendered irregular and regular practitioners alike liable to similar prosecutions.²

Edwin Van Butchell’s father, Martin (1735-1814), more fortunate than his son, apparently escaped legal troubles during his practice as an empiric, but his life was scarcely lacking in color. Son of the tapestry maker to the king, Martin studied anatomy with John Hunter and was something of a favorite pupil. Van Butchell, after years in the successful practice of dentistry, became prominent for his skill in making trusses and in treating anal fistulas. Florid advertisements in the newspapers helped to bring flocks of patients to his home in Mount Street, Berkeley Square.^{1,15} The empiric conducted a lucrative practice from 1770 until his death in 1814.¹⁶ He would not allow his red hair and beard to be cut, professing that they maintained his virility, and rode about the London streets on a white pony occasionally painted purple or with black or purple patches. A long white bone, once used as a war club in the South Seas, was brandished in the rider’s hand.

Van Butchell married twice. Edwin Martin Van Butchell was a child of the second spouse. When the first wife died in 1775, Van Butchell senior persuaded Dr. William Hunter, brother of John and also an anatomist, and Dr. William Cruikshank, William Hunter’s former pupil, to embalm her remains according to their recently developed technique. The latter involved filling the body cavities with camphor and powdered nitre and injecting the vascular system with oil of turpentine, camphorated spirits of wine, and a red dye to

maintain a natural color of the skin. Glass eyes were added. The body, stylishly dressed, was then laid on a thin bed of plaster of Paris in a box covered with a glass lid. A curtain covering the container, which was kept in the widower’s parlor, was withdrawn between the hours of nine and one to display the corpse, said to be beautiful, to friends of the family. This practice was continued for many years, exciting comment in the press and inspiring an epitaph in Latin by Sir George Baker, translated into English by the Marquis of Selby. After Martin Van Butchell’s second marriage, it is recounted, the not entirely departed first wife “is said to have occasioned some family difference, and it was found expedient to remove the preserved body” to the Museum of the Royal College of Surgeons in Lincoln’s Inn Fields.^{1,15-22}

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*A reference to the Royal College of Surgeons.

Inter-hospital Physician Information—Immunity

This resolution requested the American Medical Association to take immediate action "in conjunction with component medical societies and the American Hospital Association, to develop legally approved methods whereby information concerning a physician's hospital privileges or practice can be legally exchanged with immunity among all such parties." The House of Delegates referred the resolution to the Board of Trustees for study and report at the Clinical Convention; it submits the following report.

Background

The resolution addresses a problem that has been of concern to the medical profession and hospitals for some time. Derogatory information concerning a physician's professional performance or conduct that becomes known to peer review and disciplinary committees in hospitals and medical societies frequently has not been released in response to inquiries from other hospitals or medical societies because of an apparent fear that the physician in question might institute litigation against the hospital and its medical staff or the medical society alleging damage to his professional reputation. In some instances, the reluctance to release such information enables an incompetent or unethical physician to move from one hospital to another and from one state to another leaving behind a trail of botched cases or complaints without disciplinary action having been instituted or his license suspended or revoked in any of the settings in which he practiced.

It seeks to prevent the occurrence of such situations by the development of "legally approved methods" that will provide immunity to those who release information that may affect a physician's professional reputation. The hesitancy to release such information is not based upon reports of judicially assessed liability against hospitals and their medical staffs or medical societies, however, since no reports of successful litigation in this area were found. Publication of the truth may not be welcome, but it does not serve as the basis for successful litigation against the one who releases it. Even the release of erroneous information in the absence of malice or gross negligence does not give rise to a cause of action for which a court will grant relief.

If the fear of exposure to litigation in any way impedes the effectiveness of medicine's efforts to police itself and protect the public from incompetent or unethical physicians, however, a mechanism should be found to assure physicians of protection

when responding to requests from hospitals or medical societies. The development of "legally approved methods" to permit the exchange of information concerning a physician's professional performance and conduct "with immunity" assumes that there is some definitive existing legal authority. Such a body of law does not exist in the United States even though formal mechanisms for reviewing and evaluating the professional performance of physicians and instituting disciplinary measures against physicians have been established and implemented by the medical profession for more than a century. The following mechanisms are in current use and, although none of them have been tested in the courts, may provide guidance for hospital medical staffs and medical societies concerned with problems relating to the release of derogatory information about their members.

Consent and Release Forms

The Guidelines for the Formulation of Medical Staff Bylaws, Rules and Regulations—1971 developed and published by the Joint Commission on Accreditation of Hospitals contains the following suggested bylaw provision:

"By applying for appointment to the medical staff, each applicant thereby signifies his willingness to appear for interviews in regard to his application, authorizes the hospital to consult with members of medical staffs of other hospitals with which the applicant has been associated and with others who may have information bearing on his competence, character and ethical qualifications, consents to the hospital's inspection of all records and documents that may be material to an evaluation of his professional qualifications for staff membership, releases from any liability all representatives of the hospital and its medical staff for their acts performed in good faith and without malice in connection with evaluating the applicant and his credentials, and releases from any liability all individuals and organizations who provide information to the hospital in good faith and without malice concerning the applicant's competence, ethics, character and other qualifications for staff appointment and clinical privileges, including otherwise privileged or confidential information."

The JCAH suggests that this provision be included in the medical staff bylaws and also on the application form signed by individual applicants for initial and continuing medical staff privileges. Appointment to or continuation of medical staff privileges thus becomes contingent upon the physician's consent to the release by others of information pertaining to his professional

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competence and conduct and releases from liability those who provide or use such information for evaluating his credentials. The provision included in the Guidelines was based, in part, upon a suggestion made by a Federal District Court in a 1966 suit involving medical staff privileges to the effect that when a physician applies for medical staff privileges, he should make his professional life "an open book" to enable the hospital medical staff to evaluate his competency and his ability to comply with the medical practice standards developed by the medical staff.

The JCAH Guidelines also includes the following Comment under Article XIV, Immunity from Liability:

"Since the governing body has the overall responsibility for the conduct of the hospital in a manner consonant with the hospital's objective of making available high quality of patient care, and since the organized medical staff has the overall responsibility for the quality of all medical care provided to patients and for the ethical conduct and professional practices of its members, as well as accounting therefore to the governing body, it is of the greatest importance that the most careful consideration be given to appointments and reappointments to the medical staff and to the granting of clinical privileges. In these matters, complete candor is required. Also, every hospital, through its medical staff and management, owes a duty to other hospitals and health care institutions to respond candidly to requests for references and evaluations of practitioners and of other health care personnel practicing, employed, or trained at the hospital.

"However, it is often the case that those charged with performing or contributing to such evaluation and education activities fear that true vigilance may expose them to monetary liability. This fear has adverse consequences upon the entire evaluation and education process. Actually, where they are acting in good faith, without malice, and have made reasonable efforts to ascertain the truthfulness of the information being disclosed or relied upon, the law should, but in some jurisdictions may not, afford protection from civil liability. It is, therefore, important to assure such protection to the fullest extent permitted by law, by clear, unequivocal medical staff bylaw provisions."

The JCAH includes application forms for medical staff privileges and forms for handling inter- and intra-hospital requests for information with a physician's signed agreement to release from liability those who furnish the requested information in the TAP Institutes Manual.

The California Medical Association publication entitled "Guiding Principles for Physician Hospital Relationships" contains the California Medical Association—California Hospital Association Model Medical Staff Application which has a consent and release form for an applicant to sign containing language similar to that used in the JCAH Guidelines and Forms. The Physicians' Record Company Form B-107 for medical staff privilege applications contains similar consent and release provisions. Some county medical societies also use consent and release provisions in forms developed to enable the societies to collect and furnish biographical and professional information on members and to make the information available to hospitals and medical organizations.

The binding effect of these consents to have information concerning the physician's professional qualifications and character released and to waive certain legal rights has not been judicially determined. Physicians should be aware, however, that the protection afforded by these consent and release forms is subject to the same limitations as the common law or statutorily conferred qualified privilege that protects physicians when serving on or providing information to peer review committees. Peer review committee members and those who communicate information to them are protected in what they say or write if the following conditions are met: the communications must be in good faith and without malice; reasonable care must be exercised to ascertain the truth of the matter communicated; the information must be reported accurately and fairly; and the communication must be made only to others with legitimate interest in the information, that is to other persons or committees involved in evaluation of a physician's credentials or medical care evaluation functions.

Statutory Immunity

Thirty-six states have enacted statutes to provide immunity from liability to members of hospital medical staff and medical society peer review committees. These statutes codify the qualified privilege described above. Seventeen of these statutes also include provisions to protect the records and reports of peer review committees from discovery in professional liability litigation.

The Board of Trustees has been informed that the following statute was enacted in California on September 23, 1974:

" . . . there shall be no monetary liability on the part of, and no cause of action for damages shall arise against, any person on account of the communication of information in the possession of such person to any hospital, hospital medical staff, professional society, medical or dental school, or professional licensing board, when such

communication is intended to aid in the evaluation of the qualifications, fitness or character of a practitioner of the healing arts and does not represent as true any matter not reasonably believed to be true."

Although this statute has not been tested in the courts, its enactment is an expression of public policy favoring protection for the activities of the profession designed to improve professional standards and assure access to competent physicians for all members of the public.

Insurance Protection

Insurance coverage to provide protection against the infrequent and usually unsuccessful litigation a physician might institute alleging damage to his professional reputation in the event that a peer review committee's findings are derogatory and become known to other hospitals, medical societies or the public is available at relatively low cost. Such coverage may be obtained by hospitals, medical societies and individual physicians and provides protection against the costs of defense and damages in actions for libel, slander or defamation. The coverage also extends to the physicians when performing peer review functions

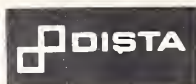
on hospital medical staff or medical society committees and the publication of the reports or findings of such committees to other hospitals or medical societies.

Conclusion

The Board of Trustees believes that the risk of liability for the release of information relating to a physician's professional competency and character is minimal if the information released is derived from objective, properly performed peer review and disciplinary committee actions. Public policy favors protecting the communication of such information as long as the communications are made without actual malice, are based upon objective evaluations, are reported accurately and fairly and communicated in order to protect the public. Adoption of Resolution 41 (A-74) is not recommended. The intent and goals sought may be achieved by the use of one or more of the mechanisms described briefly in this report in those areas where the medical and hospital associations believe that their members would be aided in their efforts to make peer review activities more effective and to share and procure the findings with other institutions or medical organizations.

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Clinical Investigation in Children

James G. Zimmerly, M.D., J.D., M.P.H., F.C.L.M., F.A.C.P.M.

As a former medical researcher, I do not envy the pediatric researcher one bit. The Pediatric researcher is caught between a rock and a hard place. On one hand, the pediatric investigator desperately needs the pediatric subject, *or patient*. On the other hand, the researcher is certain to be challenged by various groups for using the pediatric patient in *any* clinical study.

The past three years have seen the introduction of numerous bills into the federal hopper, all proposing to limit or monitor clinical research in some way. A few unethical and/or illegal clinical experiments have received a great deal of publicity over the past few years. Without passing judgement on the propriety of any clinical experiments, I shall mention a few that have been in the news recently.

Certain retrolental fibroplasia experiments of the early 1950's have drawn some recent criticism and some recent, very large malpractice claims as well. Experiments to study the body's immunological defense mechanisms, carried out in Boston, experiments that consisted of performing a thymectomy on children undergoing surgery for cardiovascular problems, and then grafting a piece of foreign skin on these children to study their response, have been recently criticized.

The New York Willowbrook State Hospital hepatitis experiments that consisted of giving retarded children oral fecal extract containing hepatitis virus and then directly injecting hepatitis virus into other retarded children have been severely criticized.

The deprivation of an essential nutrient, linoleic acid, in 445 babies at the University of Texas in the 1950's and 1960's has been recently attacked.

And here in Pennsylvania, about two years ago, the State Attorney General conducted hearings and ended some research involving testing a meningitis vaccine in retarded children at Hamburg State Home and Hospital.

To illustrate one of the major problems in using pediatric subjects, let's look at the development of the meningococcal meningitis vaccine. After the relatively *minor* details of inventing a possibly useful vaccine had been worked out at the lab bench, the researchers *real* headaches began.

How to test the vaccine? !!!

There were no suitable animal models to test the vaccine in. (This is one big reason for the delay in perfecting

a gonorrhea vaccine, i.e. no acceptable animal model to infect with the disease. The meningitidis and gonorrhea organisms belonging to the same family *Neisseria*).

The meningitis researchers had a product that (1) *might* be safe and (2) *might* be effective, but no animal model. So, they injected the vaccine into themselves. They measured their serologic reaction to the vaccine and found it to be high. They suffered no ill effects. This was in late 1968. They then recruited a dozen volunteers from among *other* researchers in the same research institute. Again, they found that they had an apparently *safe* vaccine, in these limited trials, as well as one that produced the desired immunologic response in the recipient. In order to adequately test the vaccine, as to safety and effectiveness, they needed a large population of subjects who were at high risk of contracting meningococcal meningitis. They found such a population at the military recruit basic training centers, where scores of cases of meningococcal meningitis occurred every year and resulted in considerable numbers of deaths, even though the death rate from meningococcal meningitis in the military recruit population was only 10 percent compared to a death rate in the civilian community of 30 percent (due to several factors).

From 1969 to early 1971, 30,000 soldiers volunteered to take the vaccine. Some critics of clinical research argue that soldiers (being a captive group like prisoners, medical students, children and institutionalized patients) should *not* be used for clinical research since they are too easily pressured into volunteering for projects that they might not volunteer for if they could exercise their own free will.

The soldiers, however, in this case, could be shown to be at a naturally occurring relatively high risk of developing meningococcal meningitis, and so they stood to benefit if the vaccine were effective. Of 30,000 volunteers, none suffered a single ill effect and not one contracted meningococcal meningitis. The vaccine was proven "safe" and "effective" by early 1971. The results of the testing were reported in the *New England Journal of Medicine* and were hailed as "another giant leap for mankind." Since 1971, all military recruits have received the vaccine. None have developed meningitis of this specific serotype. This type of meningitis has been eliminated as a military problem.

In late 1974, the F.D.A. approved the drug for general use in *adults* in the United States. It just so happens that most cases of meningococcal meningitis in the United States occur in *children*. The vaccine may *never* be li-

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censed for use in children if it cannot be *tested* in children. I am not saying that the selection of children in a state hospital was an appropriate selection in this case. I am merely illustrating the tremendous difficulty in developing a new pediatric drug in the United States today. Here, the researchers demonstrated *their* faith and confidence in the drug by injecting it into themselves first, like a Jenner, or an Ehrlich or a Walter Reed. Even with these known facts, the research in children at Hamburg State Hospital was stopped.

Despite the huge amount of clinical research that has been carried out in the United States, claims arising out of the research have been rare to date, for a number of reasons. One reason, I believe, is because despite the occasional unethical or illegal experiments, the clinical research in the United States has been of a generally high quality. Perhaps another reason for few suits is the fact that most research is carried out in an institutional setting, involving captive populations, who don't really know their rights and might have trouble exercising them if they did know them. Perhaps a third reason is the absence of any law on the books dealing with the topic of clinical research. There has been little in the way of state statutes regulating clinical research. But lately, the federal government has been active with numerous proposals. At this point, I would like to briefly comment on a few of the new federal regulations.

On 1 July 1974, the Department of Health, Education and Welfare promulgated the current rules dealing with HEW funded clinical research. The regulations are entitled "Protection of Human Subjects."

Summarizing the regulations for you:

A. A committee of the institution (an Institutional Review Board) must certify to the Dept. of HEW that the proposed research protocol has been reviewed and approved for conformance with HEW requirements.

B. This review must determine whether the subjects will be placed at risk and, if risk is involved, whether:

(1) The risks to the subject are so outweighed by the sum of the benefit to the subject and the importance of the knowledge to be gained, as to warrant a decision to allow the subject to *accept* these risks.

(2) The rights and welfare of any such subjects will be adequately protected.

(3) Legally effective informed consent will be obtained from the subjects and

(4) The conduct of the research will be reviewed at timely intervals.

In addition, the sponsoring research institution must assume responsibility for the subjects of any research.

On informed consent the Dept. of HEW regulations require:

(1) A fair explanation of the procedures to be fol-

lowed and their purposes, including identification of any procedures which are experimental.

(2) A description of any attendant *discomforts and risks* reasonably to be expected.

(3) A description of any *benefits* reasonably to be expected.

(4) A disclosure of any alternative procedures that might be *advantageous* for the subject.

(5) An offer to answer any inquiries concerning the procedures; and

(6) An instruction that the person is free to withdraw his consent and to discontinue participation in the project or activity at any time without prejudice to the subject.¹

I might add that the regulations specifically prohibit the use of any exculpatory language in the informed consent procedure. That is, the subject cannot be made to waive, or even appear to waive, any of his legal rights, including any release of the organization or its agents from liability or negligence.

On 12 July 1974, Congress enacted Title II of the *National Research Act*, entitled "Protection of Human Subjects of Biomedical and Behavioral Research."² This act established a National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research. The act directed the commission to study the question of research involving human subjects and to develop guidelines and make recommendations to the Secretary of HEW and to Congress on how best to protect the subjects of such research. The commission was instructed to complete its task within two years, except that it was to conduct an immediate study of fetus research and to report its findings within four months.

The National Research Act halted *all* human fetal research sponsored by HEW until after the commission made its report. The commission has completed its first report and new HEW regulations concerning fetal research came out on August 8, 1975. Under the new fetal research rules:³

A. Two Ethical Advisory Boards shall be established by the Secretary of Health, Education and Welfare.

One board is to advise the Public Health Service and one board is to advise all other agencies within the Dept. of Health, Education and Welfare on fetal research.

The boards will decide those types of research protocol that they will review, and the type and degree of information they will require at HEW.

All research protocols involving human *in vitro* fertilization *must* be reviewed and approved by the Ethical Advisory Board.

No inducements, monetary or otherwise, may be offered to terminate pregnancy for purposes of research. The researchers must have *no* part in decisions as to timing, method, or procedures used to terminate the

pregnancy, or in determining the viability of the fetus at the termination of the pregnancy.

No pregnant woman may be involved as a subject in an activity covered by these rules *unless*:

(1) The purpose of the research is to meet the health needs of the mother, and the fetus will be placed at risk *only* to the minimum extent necessary.

(2) This research may be conducted only if the mother and father are legally competent and have given their informed consent after having been fully informed regarding possible impact on the fetus, except that the father's consent need not be secured if:

(a) The purpose of the research is to meet the health needs of the mother or

(b) His identity or whereabouts cannot reasonably be ascertained

(c) He is not reasonably available or

(d) The pregnancy resulted from rape.

With regard to research on *in utero* fetuses:

(1) The research must have the purpose of meeting the health needs of the particular fetus and the fetus will be placed at risk only to the minimum extent necessary to meet such needs. (or)

(2) The risk to the fetus imposed by the research is minimal and the purpose of the biomedical knowledge which cannot be obtained by other means.

With regard to research on *ex utero* fetuses, the researchers must first ascertain whether the fetus is viable unless—

(1) There will be no added risk to the fetus from the research and

(2) The important biomedical information cannot be obtained by other means.

No *nonviable* fetus may be utilized as a research subject unless—

(1) Vital functions will not be artificially maintained, except where the purpose of the research is to develop new methods for enabling fetuses to survive to the point of viability.

(2) Experimental activities which of themselves

would terminate the heartbeat or respiration of the fetus will not be employed and

(3) The important biomedical information cannot be obtained by other means.

At the moment, numerous other new proposals dealing with clinical research are in the federal mill. H. Bill 3603 was introduced in the 93rd Congress and was reintroduced this year. It would limit the use of prison inmates in medical research.⁴

Senate 318,⁵ H. Bill 326⁶ and H. Bill 1263⁷ deal with fetal research and abortions. I should also mention that approximately a dozen other "right to life" bills are presently pending which would either expressly or impliedly, proscribe research on living fetuses.

What can we expect out of this year's Congress with regard to clinical research? Not much. I suspect that Congress will wait until next year when they receive the final report and recommendations of the National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research.

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Dosage Form Performance: A Major Factor in Clinical Medicine

Lewis W. Dittert, B.S., M.S., Ph.D.

The current clamor for more generic prescribing and dispensing of drug products has led many clinicians to question whether such products are "generically equivalent" or not. Can it be assumed that two products with the same active, therapeutic ingredient are absolutely identical? Or that they will perform identically in the patient?

Both the Federal Government's proposed "Maximum Allowable Cost" plan for drug reimbursements under Medicare and Medicaid, and the present country-wide pressures to overturn State laws prohibiting substitution of generically "equal" products by pharmacists depend largely on the proposition that such equivalence can be assumed. We believe it cannot. Not only are all aspirin tablets *not* alike, but demonstrated differences in far more potent, potentially dangerous and life-sustaining prescription medicines raise grave doubts about the wisdom of instituting wholesale brand substitution for all drug products at the present time.

The subject of drug bioequivalence, upon which rests many current political proposals, has received considerable attention in the last few years. Notable was the July 1974 publication of the Report of the Drug Bioequivalence Study Panel to the Office of Technology Assessment of the U.S. Congress, and the proposed regulations on bioequivalence requirements published by FDA in the Federal Register in June of last year.

While it may not be therapeutically significant that one aspirin preparation enters the blood twice as fast as another, or may give 25% higher blood levels, a life-sustaining medicine such as digoxin is another matter. Here, a 25% difference in blood levels is not only significant, but dangerous and potentially lethal. While most prescription medicines are not nearly so critical to sustaining life as digoxin, the mental and physical anguish a patient may suffer, for example, in the weeks it may take to discover his ulcerative colitis is not responding to a certain steroid product is worthy of medical consideration. If such a therapeutic failure is the result of failure of the dosage form to deliver the drug properly, then one day of suffering is to high a price to pay because the problem can be avoided *if* the

product is formulated, manufactured, and controlled correctly.

Compendial Standards—Traditionally, the official compendia, i.e. the United States Pharmacopeia and the National Formulary, have set standards which each product bearing an official name must meet. Is it possible that a drug product can meet such stringent standards but fail to deliver its active ingredient to the patient? The plain fact is that U.S.P. and N.F. standards for most products have been inadequate to assure that the dosage form will perform properly *in vivo*. Compendial standards were developed to insure that official products are not contaminated and *contain* the labeled amount of active ingredient. They say very little about *release* of the active ingredient following ingestion by the patient.

For many years, the compendia have depended upon the U.S.P. disintegration test to define the release characteristics of tablets. The disintegration apparatus consists of a wire basket which moves up and down through either artificial gastric or artificial intestinal fluid at body temperature. The disintegration time is the time required for the tablets to break up sufficiently to fall through the basket in which the holes are about 1/32" square. It is not difficult to see that a digoxin tablet that is 1/4" in diameter could very quickly break up into granules 1/32" in diameter and that the granules could easily pass through the basket without dissolving. As a result, a large fraction of the dose could be trapped in undissolved granules.

The U.S.P. disintegration apparatus is completely inappropriate for studying the release characteristics of capsules because they float and are not subject to agitation which mimics gastrointestinal movement. There is a rather widespread belief that capsules generally provide fewer bioavailability problems than tablets, but we shall see later in this discussion that this belief can be very misleading.

The U.S.P. and N.F. methods of chemical analysis are no help in detecting tablets or capsules with poor *in vivo* release characteristics, since most of the methods involve thoroughly grinding the tablets in a mortar or opening the capsules and removing their contents then extracting the resulting powders repeatedly with a solvent such as chloroform. Certainly, grinding and chloroform extraction do not mimic what goes on in the gastrointestinal tracts of patients.

The compendia have recognized the need for a more discerning release test for solid dosage forms, and have

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adopted a new apparatus to determine dissolution rates of tablets and capsules. *In vitro* dissolution rate standards, however, have been set for only a few U.S.P. and N.F. drugs.

Therapeutic Failures due to Dosage Form Variations—The extent to which the thousands of commercially available tablets and capsules fail to disperse and dissolve in the gastrointestinal tract is unknown. But an idea of the possibilities can be gained from the occasional dramatic examples which have been traced back to this problem.

Such was the case with certain prednisolone tablets.¹ In one instance, an elderly arthritic under treatment with a certain brand of prednisolone which performed well was switched to another brand. The second product failed to produce a therapeutic response even though the patient voluntarily increased the dosage four-fold. When both products were studied, it was found they both disintegrated in the U.S.P. apparatus in less than 2.5 minutes. However, the effective brand was 50% dissolved in 4.3 minutes, while the inferior brand took 173 minutes to reach 50% dissolution.

The anticoagulant, dicoumarol² provides another dramatic illustration of this kind of problem. A pharmaceutical firm was asked to modify its dicoumarol tablets so that they could be cleaved more easily for half-doses. After this was done, by adding more "inert" filler, it was observed clinically that the new larger tablets were not as potent as the older ones. Tests showed the second version dissolved much more slowly than the first. It was then necessary to introduce a third, more rapidly dissolving formulation, but this produced excessive anti-coagulant action resulting in bleeding in some patients. Eventually, it was necessary to readjust the dosage for all patients on the newest formulation before the situation could be brought under control.

In addition to fillers, tablet formulations usually contain binders, lubricants, and disintegrants. Seemingly minor changes in any one of these ingredients, as well as in the active ingredient itself, can dramatically effect *in vivo* performance. Because of the expense and effort required, few of these factors have been studied thoroughly in humans, but they have been extensively studied in various devices designed to test the dissolution characteristics of tablets.³ The results suggest that, as with dicoumarol, a myriad of formulation factors can greatly influence the release of active ingredients from tablets. Simply running a tablet machine with the compression set too high can greatly reduce dissolution rate.

Dissolution Rate Testing—One might ask why the formulation of tablets is so difficult if their dissolution

characteristics can be studied in the laboratory. The answer is that because of the diverse nature of drugs and dosage forms, the *in vitro* test must be literally redesigned for each product. Suppose, for example, good correlation has been observed between blood levels in humans and the behavior of a certain product in a dissolution apparatus containing 500 ml. of artificial gastric juice. Can this same apparatus be applied to another product containing a different active ingredient which is almost completely insoluble in 500 ml. of artificial gastric juice? Should the apparatus be redesigned to contain enough artificial gastric juice to dissolve the new drug (even if ten gallons are required) or should artificial intestinal fluid or some other solvent be employed? These questions can only be answered after information has been gathered on the blood levels produced by the new product in humans.

Blood Level Studies to Prove Therapeutic Efficacy—If one accepts the idea that systemic effects of a drug are proportional to blood levels obtained, then products which produce identical levels should give identical therapeutic effects—and for all conditions for which the drug is employed.

A corollary of the rule that products producing identical blood levels should be therapeutically identical is that products producing significantly different blood levels *may* be significantly different therapeutically. What we mean by "significantly different blood levels" and "significantly different therapeutically" is a matter of judgment and varies with the drug. Nonetheless, identically labeled products should produce identical blood levels, and many examples of failures of products to meet this test have appeared in the literature.

Among these are problems with ampicillin trihydrate capsules⁴ showing a more than 20% difference in peak blood concentrations in three products, all of which met assay potency requirements; sodium diphenylhydantoin capsules⁵ showing peak differences of more than 100% in blood levels after five hours among three "generically equal" products; and chloramphenicol capsules.⁶ It is interesting to note that in all three cases, the dosage form at fault was a capsule—a dosage form which is generally thought to cause little interference with drug absorption.

For oral solid dosage forms, rate and extent of dissolution are nearly always involved in bioavailability problems. A good maxim is, "The farther the drug is from being in aqueous solution, the greater the problems with bioavailability." Thus, dosage forms may be ranked according to their potential to interfere with the oral absorption of drugs as shown in the following table:

HIGH	INTERMEDIATE	LOW
Slowly Disintegrating Compressed Tablets	Suspensions Chewable Tablets	Solutions
Complicated Dosage Forms, (e.g. enteric coated tablets, sustained release dosage forms)	Capsules Rapidly Disintegrating Compressed Tablets	

The most rapid dissolution of the dosage form in the stomach is not *always* the most desirable situation. Erythromycin, for example, is chemically unstable in stomach acid, and its availability decreases as stomach dissolution rate increases. Tolbutamide is marketed as the free acid rather than the sodium salt because the free acid dissolves more slowly and produces a gradual, prolonged lowering of blood sugar rather than the brief, pronounced hypoglycemic effects of the rapidly dissolving sodium salt. And the dissolution rate of nitrofurantoin is purposefully reduced to minimize stomach upset. It is interesting to note that nitrofurantoin is one of the very few official drugs for which dissolution rate specifications have been set, and the specifications are intended to keep dissolution *below* a certain rate rather than *above* a certain rate.

This discussion only scratches the surface of the problem of *in vivo-in vitro* correlations of drug release from dosage forms. And the problem of extrapolating dosage form performance from animals to humans is equally fraught with difficulties and inconsistencies. In the final analysis, studies *in humans* are the *only* way to prove that the dosage form will work *in humans*.

The Legal Status of Prescription Drugs—Why aren't all drug products tested for drug release in humans? To answer this question, it is necessary to deal with the almost unbelievably complex question of the status of various drugs on the market in the U.S.A. We tend to think that all drugs are manufactured by licensed and inspected manufacturers under the watchful eye of the FDA, and that all legitimate manufacturers are bound to abide by so-called "Good Manufacturing Practices." Nothing could be farther from the truth. The fact is that the FDA did not—and still may not—know where all drug products are being manufactured, or who is manufacturing them, even though it recently began requiring manufacturers to both register and report what they produce. Even now, producers of drugs generally recognized as safe and effective are not required to demonstrate their competence to produce those drugs prior to marketing. And the FDA admits that they concentrate their surveillance on the larger manufacturers who are

responsible for the bulk of the drug products consumed in this country.

It should also be remembered that drugs marketed before 1938 were not subjected to any kind of New Drug Application review, not to mention dosage form performance. Examples of such "grandfather drugs" are nitroglycerin, digitalis, amphetamine, phenobarbital, and quinidine.

After the 1938 Food and Drug Act was enacted, it was necessary to demonstrate the safety of new drugs, but not their efficacy. Most of the new drugs marketed during this period were, in fact, tested for efficacy, because it was recognized that a drug intended for use in a serious condition was inherently unsafe if it was not also effective. The FDA could (and, as a practical matter did) refuse to allow the marketing of drugs on which efficacy data was lacking. It must be recalled, however, that the sophistication of drug assessment technology in that period was low, by comparison to modern pharmacological and biostatistical standards.

This was the situation until 1962, and in that period it was a relatively common practice for FDA to consider drugs which had been in widespread use over long periods to be of generally recognized safety, so that new manufacturers of such drugs were often permitted to market their duplicate products without the submission of any data demonstrating the quality of their formulations. Indeed, many such drugs, considered no longer "new" drugs in the legal sense of the term, were marketed without FDA's knowledge, let alone its approval. The rationale was that the innovator had proven the drug safe, and that its formulation was well understood. Few questions were raised about the possibility that the imitator's dosage form might be unabsorbable and therefore unsafe and ineffective, or that it might be more bioavailable than the innovator's product, and therefore potentially more toxic.

Often physicians would report ineffective products to the FDA, and often those products would be found to be chemically sub-potent. But little could be done about the product that seemed to be ineffective but still met potency and other compendial standards.

The steroids, the anticoagulants, the penicillins, the tetracyclines, many sulfonamides, and a host of other agents were first marketed in the 1938 - 1962 period, and many imitations of the original products were marketed before the 1962 amendments to the drug law. It is from this group of products that the greater part of the present-day problem of uncertain bioavailability has come, and because of its magnitude, the problem is not easily solved.

The Requirement of Efficacy—The 1962 amendments required, for the first time, that a new drug be proven to be not only safe but effective for the

conditions for which it was to be prescribed. The FDA, through landmark court decisions, has succeeded in applying this principle to nearly all prescription drugs.

As a result, the NAS-NRC panels were formed to classify all drugs as effective, probably effective, possibly effective, or ineffective for each therapeutic use mentioned in the package insert, and a great amount of clinical work is being done to gather scientifically sound data to support various therapeutic claims. Equally important, however, is the fact that the present criteria for effectiveness also require that identically labeled products be proven equally effective. Thus, generic equivalents which have been marketed without clinical trial or even minimal data submission, ought now to be re-examined in order to establish that they are in fact interchangeable with the original or reference product. Since it is no longer possible to assume that all products meeting compendial standards are equally effective, it is necessary to prove the equivalency of each generic product, at least in terms of bioavailability, and, when indicated, in clinical trials of therapeutic efficacy.

The FDA has recognized that a demand for full-scale proof of the safety and efficacy of all duplicate products would severely tax the clinical resources of the nation for the next several years. Consequently, it has begun a program to develop detailed product performance standards on a drug-by-drug basis. To date, only a few drug classes have been brought into compliance. Most remain unstudied.

A factor which slows removal of ineffective products from the market is the ponderous legal machinery involved. After a drug product has been found to be ineffective, several months may be consumed by hearings and other administrative procedures, and if the manufacturer demands a hearing in court, the time may stretch out to a year or longer. Meanwhile, the product may remain in commerce. Fortunately, a recent supreme court decision has made it possible for the FDA to deal with drugs by class rather than product by product, and this should speed up regulatory action considerably.

FDA Proposals on Bioavailability Determination—The FDA has recently published comprehensive proposals for establishing bioequivalence requirements and for determining the bioavailability of drug products in humans.⁷ These proposals will, if adopted, have significant long-term effects on the quality of prescription medicines marketed in this country. They would define those instances in which human bioavailability data would be required for marketing approval and those instances in which certain alternative assurances of bioequivalence would be accepted.

In some cases, duplicate products would be allowed to reach the market without FDA review of even an

Abbreviated New Drug Application. This practice may be disquieting to clinicians in light of what we have said about the importance of subtle formulation differences, and that concern is not substantially eased by the knowledge that product formulation failures may bring recalls only after there have been sufficient patient exposures to bring the products' dangers to light. But there are a number of types of drugs and drug products for which there are valid scientific reasons to believe that formulations can be adequately controlled solely on the basis of laboratory tests. The FDA has indicated its intention to rely on its "Good Manufacturing Practices" regulations and compliance with so-called "Old Drug Monographs" to regulate the marketing of these types of products. If those intentions become final regulations and the system reaches full-scale operation, the equivalence of such "Old Drugs" will be assured. But, it is highly likely that several years will elapse before that state of affairs is reached.

An even longer period will be required to study and bring into compliance those drugs for which human bioavailability testing is required. Meanwhile, the practicing physician must select with care the drug products he prescribes for his patients to ensure that they are getting the full benefit of the therapeutic regimen he has selected.

Summary and Conclusions—Formulation of oral solid dosage forms to produce optimum therapeutic activity with minimum toxicity is a tricky business. The physical-chemical properties of the drug and the excipients used in the dosage form as well as the nature of the desired responses and side effects, the physiology of the patient, and concomitant drug therapy all interact to influence drug product performance.

The therapeutic performance of a drug can be dramatically affected—even destroyed—by improper pharmaceutical formulation. The U.S.P. and N.F. say nothing about the composition or method of manufacture of official oral solid dosage forms and set no specifications concerning release of their active ingredients in humans. In a very few cases, they specify *in vitro* dissolution rates.

The legal jungle in which the drug business operates makes it almost impossible to tell which drug products have been adequately tested and are marketed by properly inspected and controlled manufacturers and which have not. The FDA is moving swiftly to resolve these problems, but their very magnitude means that several years will be required to complete the task.

Meanwhile, the busy practicing physician must decide which prescriptions can be safely written generically and which should be written only for the originally marketed brand. As with other drug information, the community pharmacist is a good

source of advice on this subject, and close cooperation between the physician and the pharmacist can lead to safe, effective therapy at reasonable cost.

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Month in Washington

A federal-state campaign to reduce Medicaid fraud and abuse has been launched by Health, Education, Welfare Secretary David Mathews.

A team of federal and state Medicaid examiners will begin its work in Massachusetts soon at the invitation of Gov. Michael Dukakis. Another team will begin operations in June in Ohio at the request of Gov. James Rhodes.

HEW said it plans to focus the joint effort on states with the largest Medicaid programs. With reviews in at least five states this year.

The federal-state examiners will have two basic objectives, Secretary Mathews said. They will identify fraud and abuse and refer specific violations for possible prosecution. They will help states develop efficient program management and abuse detection systems.

HEW has developed a computerized Medicaid management information system (MMIS) to aid in the processing of claims. MMIS will alert a state if, for example, a patient was in a hospital the same day a physician claimed to have treated him at home, or if a pregnancy test was ordered on a male, HEW said.

HEW is assembling a Medicaid fraud and abuse unit of 108 people in the Medical Services Administration, and a criminal investigative branch of 74 investigators which will report directly to Under Secretary Marjorie Lynch.

HEW said it will coordinate its Medicaid investigative efforts with the Department of Justice and the Internal Revenue Service.

Mathews said he plans to invite representatives of national health services provider organizations to Washington shortly to solicit their ideas and to urge them to undertake a self-policing program and to assist the states in identifying potentially fraudulent providers.

"We recognize that the overwhelming majority of health care providers are ethical and professional," Mathews said. "They share our desire to bring efficiency to Medicaid in its management and in the quality of health care it offers. We want to ferret out the comparative few who break the law. We believe the health professions organizations will give us their enthusiastic support in this effort."

Heading the HEW office of investigators will be John J. Walsh, senior investigator for the Senate permanent subcommittee on investigations and former FBI agent.

Major changes in the Medicare-Medicaid programs are called for in proposed legislation introduced by Sen. Herman Talmadge (D-Ga.). The proposal would establish incentives for physicians to accept assignment; restrict payment methods for hospital-based specialists; mold Medicare, Medicaid, and the Bureau of Quality Assurance into a single agency; and set up reimbursement incentive programs for hospitals.

Talmadge, Chairman of the Senate Finance Subcommittee on Health, said in a Senate speech "either we make Medicare and Medicaid more efficient and economical or we reduce benefits. We have just too many worthwhile demands on the limited federal dollar to be able to allocate increasingly disproportionate amounts to Medicare and Medicaid."

Hearings will be held sometime this year, Talmadge promised, but he set no date. He stressed that the proposals are not "frozen in concrete" and are subject to change following the hearings according to the testimony received.

The influential Senator surprised the health field last year when he made a Senate speech outlining the ideas finally put in legislative form recently. Many of the recommendations are controversial, especially the reorganization of the health activities at HEW that are bound to be opposed by the administration and the restrictions on payment of hospital-based specialists.

Talmadge describes the specialist provision as follows:

"Under the legislation, specialists—such as certain radiologists, pathologists, and anesthesiologists—would be eligible under Medicare-Medicaid for fee-for-service, or other reasonable fixed compensation agreed upon with a hospital, for services which they personally render or which are provided under their direct personal supervision. For their administrative and general supervision of an X-ray, laboratory, or anesthesia department, the hospital could compensate them on a basis comparable to what a salaried radiologist, pathologist or anesthesiologist receives for comparable time and work. No percentage, lease, or direct billing arrangements would ordinarily be recognized for Medicare or Medicaid reimbursement purposes..."

Physicians who choose assignments, to be called Participating Physicians, would be able to submit simplified and fewer claims and receive a \$1 per patient bonus for most office visit charges. Medicaid would have to pay not less than 80 percent of the Medicare reasonable charge for non-surgical care. As a means of encouraging physicians to move into physician shortage areas, new physicians could establish customary charges at the 75th percentile of prevailing charges in the locality, rather than the present 50 percent.

A single administration for health care financing (CAPS) would contain the present Medicare, Medicaid and Bureau of Quality Assurance Agencies to be headed by an Assistant HEW Secretary. Within this Agency a central fraud and abuse unit headed by an inspector general would monitor performance and violations of law.

The bill would abolish the Health Insurance Benefits Advisory Council.

A new reimbursement system is designed to reward hospitals with less than average operating costs and penalize those with higher costs.

Now passed by both Houses and awaiting conference, medical device legislation has made members of that industry predict a bullish future.

The legislation will add \$250,000 to \$700,000 in costs to products requiring pre-market approval. The hottest medical device will continue to be the pacemaker. Sales are expected to increase at an average annual compound rate of 9 percent. Another big item is the cat (CAPS) scanner. Manufacturers predict 3,000 placements by 1980. The use of renal dialysis is expected to triple by 1980. Catastrophic or comprehensive national health insurance will also help the industry. Makers of orthopedic and surgical appliances, clinical diagnostics, medicinals, and pharmaceuticals all expect steady growth. Drug companies predict biggest growth in anti-arthritis sales.

The legislation provides three categories for devices—class I, general controls; class II, performance standards; and class III, premarket approval, the general controls give FDA authority to move against devices that are misbranded or badly-made and require their registration as if they were drugs. FDA can exempt some devices from this control, such as custom devices not intended for general sale.

Class II devices would be required to meet certain manufacturing standards.

The class III classification involves pre-market clearance for new products and essentially the same type of clearance for existing products. The House Commerce Committee report said it expected that intrauterine devices would fall in the class III category.

The Senate Labor and Public Welfare Committee has approved legislation subjecting clinical laboratories in both intrastate and interstate commerce to federal licensure and standards requirements.

The revision of the Clinical Laboratories Improvement Act (CLIA) would cover labs operating only within one state for the first time, and give HEW a stronger role in supervising the nation's clinical laboratories.

Individual physicians who perform tests solely in connection with treatment of their own patients could be exempted from the law's requirements if HEW wished.

The measure, expected to be voted soon by the full Senate, provides leeway for continuation of existing accreditation and certification programs by the Joint Commission on Accreditation of Hospitals and the College of American Pathologists (CAP). AMA and the CAP had urged Congress to allow these activities to continue.

One provision adopted by the Committee would require disclosure of fees and contractual relationships between labs and physicians using their services.

The House Commerce Subcommittee on Health is slated to start hearings soon on similar legislation.

The government's controversial plan to limit reimbursement for some Medicare-Medicaid drugs to the lowest cost available is slated to take effect soon (April 26) despite opposition from pharmaceutical and medical groups and questions raised by lawmakers.

HEW Secretary David Mathews said the disputed proposal inaugurated by his predecessor, Caspar Weinberger, will be implemented on schedule. "We will never find out what will happen until we do it," Mathews said in a letter to G. Joseph Stetler, President of the Pharmaceutical Manufacturers Association (PMA).

The PMA and the AMA have filed suit against the proposed Maximum Allowable Cost (MAC) regulations. The AMA contends the plan violates patients' rights to seek the best medical care according to their physicians' best judgment in prescribing.

Rep. Daniel Flood (D-Pa.), Chairman of the House Appropriations Subcommittee on Health, recently asked Mathews, "What's magic about now? The states are not ready; why can't you wait to prove the soundness of the program?"

In his letter to Stetler, Mathews said that if MAC proves detrimental to drug development or distribution, "it will be changed or dropped."

Federal administrative costs were estimated at more than \$2 million a year by Mathews. States will have to pay an initial \$3 million.

The American health care system is due for tight government control because costs are becoming more than the economy can bear.

This was the grim message of speaker after speaker at a Washington, D.C. conference on the economic impact of health care legislation. The meeting was

Continued on page 358

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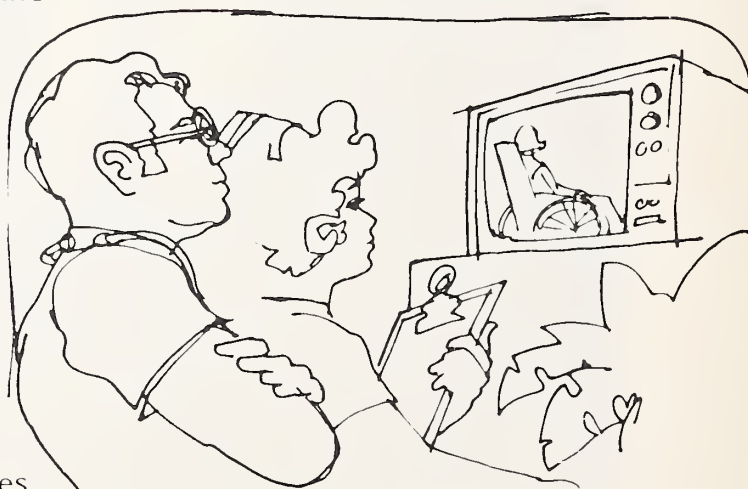
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The President's Page

In this issue of the *Journal* I approach you for the first time to communicate with you and to initiate discussion regarding matters which are of utmost concern to all of us. The past few years have provided a large number of issues which affect the manner in which we practice medicine. They also affect the type of medical care which our patients receive. Individual items will be dealt with at greater length in future discussions. To mention just a few of the significant issues of recent times, however, I would call attention to the emergence of PSRO's, professional liability insurance problems, PL 93-641 (National Health Planning and Resource Development Act) and in Connecticut, legislation regarding the disciplining of physicians. Still ahead of us is the entire matter of National Health Insurance.

It is not my purpose at this time to discuss the merit or lack of merit of the decisions which have been made. I would instead address the question as to what role we as physicians have played in the solutions of these problems and to ask whether we have perceived the problems and dealt with them in the manner they deserved. I must say that all too often we still find ourselves in the position of reacting rather than in the role of leadership.

It has been a time-honored concept held by many physicians that our function is only to practice medicine, that if we would see to it that we did a worthwhile job in this respect everything else would take care of itself. There is much to be said for this concept. Theoretically if all medical practice were perfect there would be no need for the many legislative acts arising both nationally and at the state level which pertain to medicine. From a practical point of view, however, we must agree that this concept is outmoded.

We all know that economic and social concerns have advanced in recent years. This is not a phenomenon peculiar to medicine. It is one, however, which does have great impact on the practice of medicine and which we must face openly and honestly. We can say no longer that we will practice only as we think best. We must admit the need to structure our pursuit of medical practice in accordance with the demands of society. The model "T" is out and although it was a great buy in its day, probably offering much more value for the investment than anything we have to offer in its place, we must live with today's market and forget about the past.

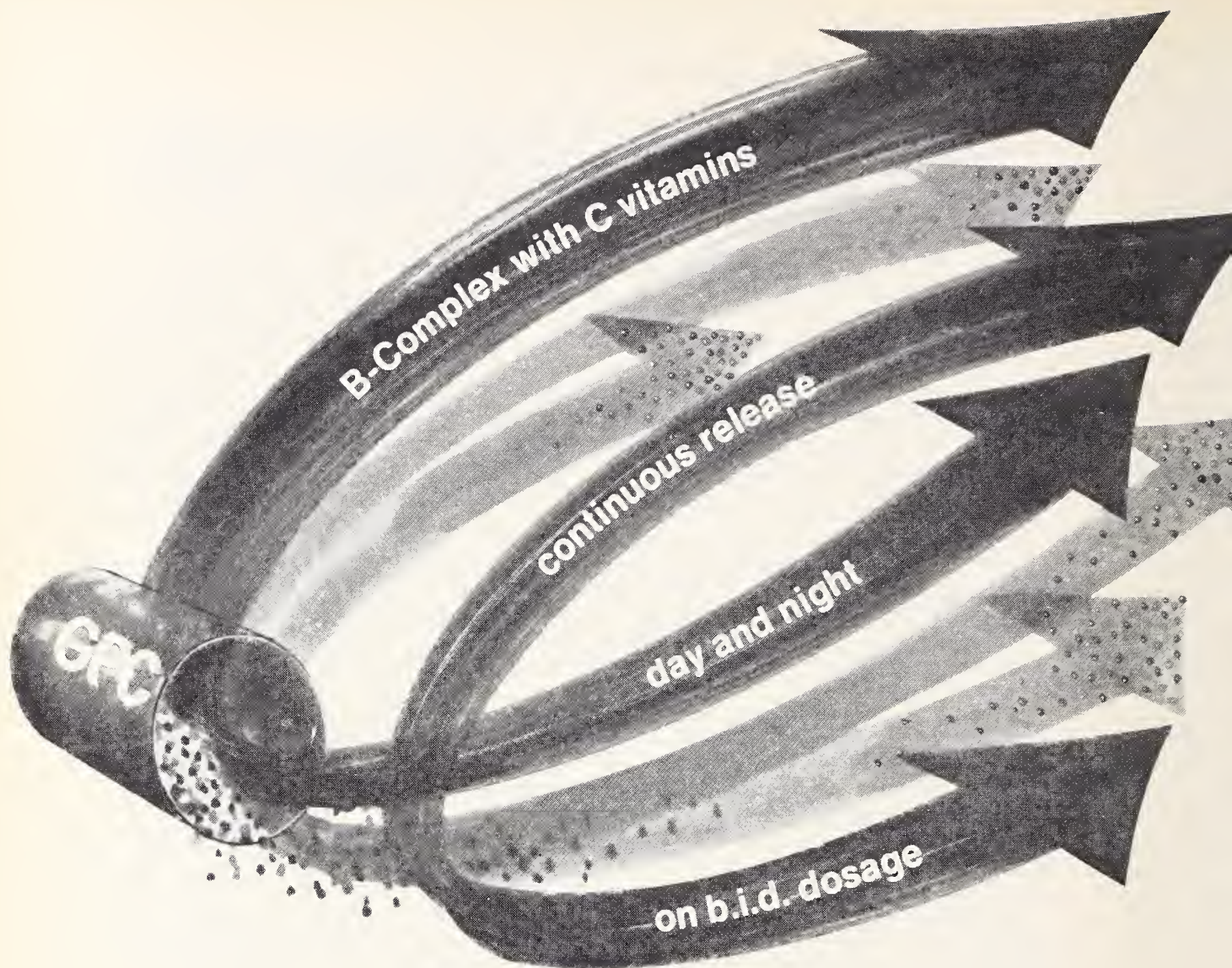
If we will accept this basic idea, we can come to the matter of our role. Changes are being made rapidly. Economic and social realities demand changes in delivery of health care. Consumer groups are forcing the issue and legislation is tending more and more to bypass the physician and to turn over to other agencies responsibilities that have always been in the domain of the medical profession. If we are not to tolerate further imposition from without we must provide the leadership from within. We must become initiative and suggest measures to meet the demands of today. To do this we must all become actively involved and concerned.

Medical leadership will be effective only if it is representative of the entire profession. Only if each and every one of us will take an active part, if we will become involved with the problems we face, if we see to it that our opinions are expressed, that our suggestions and initiative are heard and form the basis for actions to be taken, only then can leadership speak for all of medicine.

The structure of the AMA is a completely democratic one, starting at the county level, proceeding up through the state and ultimately to the House of Delegates of the AMA, wherein the leadership of American medicine lies. There is no more democratic an institution than the House of Delegates which reflects only the will of its constituents, those who are willing to take time and interest to formulate opinion from the grass roots level. It is the only body that embraces all factions in the medical profession.

We must insure the fact that when the voice of the AMA is heard that it is representative of the entire medical profession. Obviously this does not mean that all physicians will agree on any issue but it does mean that the opinion advanced in the name of medicine will be the one agreed upon by the majority after thorough consideration. It means that we must all be willing to participate, to become involved in proposing as well as deciding issues. As we demonstrate our involvement and concern about medical problems we can become a greater force in their solution. Strong, active, total participation by all physicians will make us a group to be considered.

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Reflections from the Dean's Office

Robert U. Massey, M.D.

Commencement time is here again, and in this Bicentennial Year there will be references to the Nation's past, and, by association, to historic matters generally.

Medicine, medical schools, and universities are older than the Republic. This point will be made in commencement addresses to medical school graduates to remind them of the great antiquity of our educational foundations and to stimulate pride in our professional traditions. That is one of the legitimate uses of history, and in these days of faltering self-esteem, history as epic may provide the sustaining strength to help us on our way.

History is a kind of natural philosophy, and historical research is performed to test hypotheses, challenge opinions, and help form new ones. The study of the past requires no further justification than the satisfaction of our curiosity; the stability of our values may depend upon how seriously we take our history.

Like most forms of knowledge, history also has a practical use. Provided the historical data are reliable and fairly set forth, they become an extension of experience. An account of society's mistakes and their antecedents would seem to be useful to those who undertake to plan society's future. It has been said that fools learn by experience; the implication is that the wise take sufficient thought to avoid blunder or learn by the experience of others.

Lewis Thomas suggests that the capacity to err is uniquely human, that "if we were not provided with the knack of being wrong, we could never get anything useful done."¹ We advance by testing alternatives and being wrong most but not all the time.

When a committee meets to deal with a problem which is neither unique nor new, someone is certain to suggest that it should not be necessary to reinvent the wheel. No two human problems are ever quite the same. The solutions, however, may be similar enough, and if one problem has been solved by a wheel, by analogy a wheel may be useful again.

Errors often open new roads to discovery. Perhaps in the long view of human history, almost all wrong turnings have worked an improvement on the race. In our short lives, or in the short lives of our institutions, however, error may seem unaffordable. It is then that we would like to eliminate the wrong choices. If we

could understand fully, we should never, except deliberately, choose error.

"Little flower—but if I could understand
What you are, root and all, and all in all,
I should know what God and man is."²

We could then visualize everything clearly, anticipating the future with the certainty that what has formed in our minds corresponds precisely with what really is "out there." Sometime, millennia hence, we may be able to do exactly that; we have had inklings that we possess that potential. Since we and the universe are made of the same stuff and are subject to the same laws, a correspondence is not at all unlikely.

Meanwhile, we are bound to err. History, as an applied study, would be useful in keeping us from silly errors because it is so full of example. Silly errors can be tragedies, and we do not know enough to keep from making them again and again, forgetting the experiences of history.

Medical history is filled with tales of error—many tragic, others frightening, a few amusing. Until the 17th Century, medicine, with few interruptions, had been a long history of error and bad observation. Only with the coming of the age of science did medicine begin to be useful to anyone but its practitioners.

Medicine as science and useful art is new, newer than the Republic. By the end of the last century in Western Europe, scientific medicine had become firmly established and the long dreary reign of empiricism was coming to an end. But in North America, except for a few places along the eastern seaboard, where the influence of the German universities was strong, medicine and medical education was the worst in the western world. There were bright spots, of course, and fine clinicians doing their best to get the reform underway, but the inertia was great.

Most of us living now cannot remember those times before 1910 when men without a high school diploma and barely able to read were admitted to medical schools. We are surprised at that and certain that it will never happen again. But something like it could happen; the antiintellectual, antiscientific populist forces are strong in our history. The Bicentennial Year is an occasion to remember our errors and how we came to make them.

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EDITORIALS

Breast Cancer—A Breakthrough?

A transition from clinical research to application in everyday medical practice is seldom accomplished smoothly and without trauma to both patient and physician. In recent months this bumpy road has been often traversed as practitioners and patients have been bombarded in professional journals and the lay press by results of investigations hailed as critical progress in the vital quest to decrease morbidity and mortality in women with breast cancer. These studies describe early results indicating that adjuvant chemotherapy with a variety of agents administered immediately after initial surgical treatment can markedly reduce the incidence of recurrence and increase longevity.

It is important to examine carefully the rationale for this approach in the context of our present knowledge, or lack thereof, regarding the process of development of recurrent breast cancer. Unfortunately, little is known about the how's and why's of metastatic cancer. One attractive thesis postulates the "breaking off" of cells from the primary tumor which, in turn, disseminate via vascular and lymphatic channels throughout the body. Precisely when in the natural history of breast cancer such dissemination might occur has not been ascertained. This phenomenon may already have taken place when the original diagnosis is established and primary therapy is administered, but confusion arises concerning the patient whose mastectomy was performed twenty years earlier and then has a focus of metastatic cancer. Where have the cells been during intervening decades? Did dissemination actually occur twenty years before and what are the circumstances for cell replication which did not evolve until now?

Why the long delay? These queries are unanswerable at present.

Let us assume that the problem is, indeed, this postulated cell dissemination. It seems logical, and this is the basis for the prophylactic chemotherapy concept, somehow to "sterilize" the organism and kill these cancer cells. And what better way to do this than to introduce an agent into the systemic circulation to destroy these cells before they become established as metastatic foci? Unfortunately, all such agents presently available are toxic, not only to cancer cells but also to normal cells, and this toxicity varies in degree from agent to agent and from patient to patient. Part of the toxicity is immediate and by prompt recognition, immediate reversal can be achieved by discontinuing the drug. But there are other long-term effects from these powerful cell-destructive drugs not yet defined and it is difficult to predict what delayed effects may develop. These could conceivably be worse than the metastases. Interference with immune mechanisms, for example, might result and one can now only conjecture what role immunity may play in the overall situation of the woman with breast cancer.

But for the sake of argument suppose we accept some toxicity as necessary and unavoidable to achieve the goal of "prophylaxis". Next we must make a reasonable determination of how long the drug should be administered to "sterilize" the patient of her wandering cancer cells. Once again, we lack knowledge and many years are needed to provide answers. This is the crux of my current anxiety, i.e., the rapid and highly publicized dissemination of preliminary clinical results, with acceptance before adequate observation to determine how preliminary results hold up over a long span of time. Breast cancer is not a disease of short duration. It is more often a slow

process and years of observation are necessary before any therapeutic intervention can be evaluated with certainty.

I am most concerned about what has not been said in recent publications theorizing possible mechanisms for the apparently improved results in premenopausal patients receiving adjuvant chemotherapy as opposed to control groups. Specifically, the resultant amenorrhea suggests that the basic mechanism in one group of patients, where results to date seem to have been most gratifying, is drug-induced interference with ovarian function and we find ourselves again pondering the role of prophylactic castration and its significance in the treatment of breast cancer, a concept that has been in and out of favor over many decades.

I am anxious to find the answer to breast malignancy but I am not anxious to see vast numbers of patients treated willy-nilly before careful analysis of long-term results. A whole generation of women may be irreparably harmed by ill-conceived chemotherapy administered for an unproven prospect of prophylaxis. Though respect for past learning is unfashionable in this fast-moving world, medicine should not be a vogueish art or science. Let us be patient until the many investigations underway are completed with adequate follow-up to provide more certainty before possibly creating new problems for our patients with hasty application of methodology still under investigation. The argument is offered that we cannot wait because the outlook for a patient with positive axillary lymph nodes is so poor, and even if a few patients are harmed, the overall benefit to womankind is such that the toll must be accepted. I do not agree with this concept. I feel that our primary medical obligation is to do no harm. Our moral obligations are certainly complex but I find it difficult to accept informed consent from the patient for an unproven prophylactic therapy without any knowledge of what it may perpetrate in the distant future. Adjuvant chemotherapy may yet prove to be a great forward step in the treatment of breast cancer, but the patient we treat today should be central to our concern. With so much we do not know, let us await completion of preliminary investigations before hastily embracing novel methods of therapy for these already unfortunate women.

Ira S. Goldenberg, M.D.

Professor of Clinical Surgery,
Yale University School of Medicine

Variations in Laboratory Test Results

It is now commonplace to analyze a patient's blood daily or even more frequently for a variety of chemical constituents. This poses a new dilemma which was unusual when tests were done infrequently; if the results differ from one analysis to another, what conclusions should be drawn?

The factors involved can be considered in two categories: those associated with the analysis and those associated with the patient.

Analytic Factors

We may further subdivide this group into factors of *accuracy* and of *precision*. *Accuracy* is concerned with closeness to the truth. If repeated analyses are performed in the same laboratory under the same conditions there should be no problem with accuracy, but if analyses are performed in different laboratories there can be major discrepancies associated with different units, standards, reagents or methods.

Precision is the closeness of the results of repeated analyses performed, on the same material¹. No matter how wonderful the method and analyst are it is impossible to obtain exactly the same results repeatedly. Precision expressed as coefficient of variation (standard deviation divided by the mean expressed as percent) varies considerably for different tests and must be calculated for each new analysis. In general however the following CVs are valid:

Sodium - 1%

Most analytes - 2 - 5%

Enzymes - 10% (at normal levels).

Using these figures, changes of 3% for sodium, 10% for most other analytes and 30% for enzymes are almost certainly significant; lesser changes are less likely to mean anything.

A final analytic factor is the true *error* or *mistake*. Errors of this type involve mislabelled specimens, wrong calculations, transposed or miscopied numbers, etc. The actual incidence of these errors is unknown, but probably is not less than 1%. If tests are repeated often enough such errors will inevitably be observed. A test particularly subject to unexplained errors is the alkaline phosphatase.

Patient variables

Some of these are well-established, others uncertain. For example change from the usual ambulatory state to a reclining posture for thirty minutes will cause dilution of the protein, lipid and formed elements of blood by a factor of about 5%.² A patient who walks into the Emergency Department with a history of bleeding might have a hemoglobin of 14 grams which will fall an hour later to 13.3 gm due to bed rest alone. Other patient variables include emotion (fear can raise the

blood glucose substantially), shock, fluid changes, etc. Finally there are the therapeutic interventions which ordinarily befall the hospital patient. For example intramuscular injections can raise the CPK substantially. There are a myriad of test alterations due to medications, some physiologic, some due to toxicity, some spurious due to interference with analytic procedures; in fact Dr. Young's up-dated list³ now enumerates 17,000 such reactions!

Conclusions

1. The more tests are done the more inexplicable changes will occur.
2. Do not use laboratory test results as the sole basis of therapeutic intervention unless they are compatible with the clinical picture.
3. If possible withhold medication before drawing blood test samples.
4. Interpret changes in test results of less than 10% very cautiously.
5. Repeat tests whose values are difficult to interpret if the results will influence your treatment.
6. Don't compare results from different laboratories unless you are thoroughly familiar with the analytic techniques used.

Roy N. Barnett, M.D.

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Deprofessionalizing the Profession

So many vocations are now identified—often self-identified, to be sure—as professions, that the designation has become all but meaningless. Traditionally and ideally, however, a member of a profession pursues a scholarly discipline in a way that inspires confidence and trust, and that prizes expert performance of a skill above financial gain. A profession thus suffers when suspicion and distrust replace its fiduciary image, and when commercialism supersedes other, less selfish motives. Unfortunately, such debasing trends appear to be affecting most of the country's professions, including that of medicine—"The Shame of the Professions," Max Lerner has recently called it.¹

Few, interestingly enough, are happy about the deprofessionalization of medicine—neither the doctor nor his critic. The reasons for their discontent, how-

ever, differ. To the physician, the task of inspiring confidence and trust becomes impossible when the patient has been indoctrinated to disrespect medical authority and to see the doctor as an incompetent and arbitrary wielder of irrational decisions ("Talk Back to Your Doctor" exhorts a recent book²), a person to be sued. The critic is concerned not just by the size of medical fees but by the apparent unwillingness of the medical profession to make some charitable financial adjustments in the care of the poor or uninsured, by the unavailability of some doctors except during "business hours," and by the increasing threat and even use of doctors' strikes or other forms of what the British call industrial action.

Into this state of declining professionalism—desired by no one except a few doctrinaires who seek to eliminate any suggestion of medical elitism—federal bureaucracy has now intruded, and this intrusion must rank as sheer inanity to anyone who believes that superior medical care and the maintenance of some professional attributes go hand in hand. In brief, the Federal Trade Commission has initiated action that, if successful in hearings and in the courts, would remove the traditional ban against advertising by doctors. If the FTC has its way, and doctors succumb to hucksterism (Consult Dr. Paracelsus! Rapid Service, Accurate Diagnosis and Up-to-Date Treatment! No rectal or vaginal examinations or other unpleasant procedures. Attractive male and female assistants. See our latest Diagnostorama. All for only \$25.00!), no one need worry any longer about deprofessionalization. The process will have run its full course, for what better way than advertising to annihilate trust and confidence, what more effective means to convert medical practice into a purely commercial enterprise?

The FTC justifies its action by claiming that the prohibition of advertising by doctors violates anti-trust laws, and that it represses competition. If doctors could advertise their fees, the FTC contends, charges for medical services would decrease. The publicizing of fees, however, is a far cry from unlimited advertising. Indeed, a few medical organizations have already agreed to co-operate with consumer groups in the development of directories that list not only office hours and general availability of a physician, but also his formal qualifications and his customary charges. But even such listings may be meaningless if not misleading unless time as well as money is taken into account. A \$10 visit might last five minutes—a \$30 visit, 60 minutes. Indeed, the influence of third-party payers is tending to standardize fees, and the crucial variables, therefore, are not dollars but skill and effort, qualities that if advertised by any physician could be taken as correlating accurately with his actual skill and effort, although in an inverse manner.

In view of the prevalence of bureaucratic blunders, another one is hardly cause for surprise. More astonishing, if not disconcerting, it is indifference of the public and its spokesmen—politicians, commentators, editors—to the FTC move. Voices that have sharply attacked the increasing commercialism of medical practice are strangely silent, or even approving, as the FTC acts to have doctors (and lawyers too) join other “professionals” who characteristically solicit their customers’ business. It is possible that some of the public’s leaders may find the FTC action justified. Thus, some may see a precedent in the recent Supreme Court decision banning uniform minimum fees for lawyers in real-estate transactions, but banning uniform fees is hardly the same as banning constraints on wholesale advertising. Others, who interpret as entirely proper the FTC’s attempts to facilitate advertising of drug prices, may accept as equally salutary the advertising of the drug prescriber’s prices. The analogy is fallacious, for a given brand-name drug is a fixed product of identical quality wherever sold; whereas the quality of professional service fluctuates widely with the competence and motivation of the physician. Whatever the reasons for their indifference, the public and its spokesmen must come to realize that the FTC is offering them a bad bargain. For the questionable benefit of having the costs of a physician’s services listed publicly, an already faltering professionalism would be given the coup de grace. Will this exchange promote effective patient care? Is a totally commercialized medical practice what the public really wants?

F. J. Ingelfinger, M.D.

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Reprinted from New England Journal of Medicine.

Letters

Connecticut State Medical Society members are invited to write to the Editor expressing their opinions or giving information on matters of mutual interest. As with other material, all correspondence will be subject to the usual editing and possible abridgment. Letters to the Editor should be typewritten double-spaced and must not exceed 1½ pages in length.

ADDRESS: J. Alfred Fabro, M.D., Editor
CONNECTICUT MEDICINE
160 St. Ronan Street
New Haven, CT. 06511

The Courts and the Quinlan Case

EDITOR'S NOTE: *On March 31 the New Jersey Supreme Court handed down its decision in the case of Karen Anne Quinlan, the 22-year-old woman who had been in a coma for almost a year and whose father had petitioned for the right to seek physicians and hospital officials who would agree to remove the respirator.*

Connecticut Medicine has excerpted from the Court's decision the following passages applicable to the medical aspect of the question. In view of the unwillingness of the original physician in the case to withdraw the life-supporting mechanisms, it should be noted that the Court's decision authorizes the Quinlan family to change physicians if its current medical advisor refuses to reconsider his position.

The Attorney General of New Jersey has decided not to appeal this to the United States Supreme Court. This makes the decision of the New Jersey Supreme Court the common law of New Jersey. Though not applicable to or binding on other states, it will, because it is a precedent, undoubtedly provide a guideline for other courts in the country in similar cases.

“The existence and nature of the medical dilemma need-hardly be discussed at length, portrayed as it is in the present case and complicated as it has recently come to be in view of the dramatic events of medical technology. The dilemma is there, it is real, it is . . . resolved in accepted medical practice without attention in the courts. It pervades the issues in the very case we here examine.

“But insofar as the court, having no inherent medical expertise, is called upon to overrule a professional decision made according to the prevailing medical practice and standards, a different question is presented.

“The medical obligation is related to standard and practice prevailing in the profession. The physicians in charge of the case . . . declined to withdraw the respirator. That decision was consistent with the proofs as to the existing medical standards and practices.

Medical Inconsistency

“However, in relation to the relief sought by plaintiff as representative of Karen’s interest, we are required to re-evaluate the applicability of the medical standards projected in the court . . . The question is whether there is such internal consistency and rationality in the application of such standards as would warrant their constituting an ineluctable bar to the effectuation of substantive relief for plaintiff at the hands of the court. We have concluded not.

“The agitation of the medical community in the face of modern life-prolongation technology and its search for definitive policy are demonstrated in the large volume of relevant professional commentary.

“The wide debate contrasts with the relative paucity of legislative and judicial guides and standards in the same field. The medical profession has sought to devise guidelines such as the ‘brain death’ concept.

Distinction Made

"We glean from the record here that physicians distinguish between curing the ill and comforting and easing the dying; that they refuse to treat the curable as if they were dying or ought to die, and that they have sometimes refused to treat the hopeless and dying as if they were curable.

"We think these attitudes represent a balanced implementation of a profoundly realistic perspective on the meaning of life and death and that they respect the whole Judaeo-Christian tradition of regard for human life.

"Having concluded that there is a right of privacy that might permit termination of treatment in the circumstance of this case, we turn to consider the relationship of the exercise of that right to the criminal law. We are aware that such termination of treatment would accelerate Karen's death. The county Prosecutor and the Attorney General stoutly maintained that there would be criminal liability for such acceleration. Under the statutes of this state, the unlawful killing of another human being is criminal homicide.

Conclusion

"We conclude that there would be no criminal homicide in the circumstance of this case. We believe, first, that the ensuing death would not be homicide but rather expiration from existing natural causes. Secondly, even if it were to be regarded as homicide, it would not be unlawful.

"These conclusions rest upon definitional and constitutional basis. The termination of treatment pursuant to the right of privacy is, within the limitation of this case, ipso facto lawful. Thus, a death resulting from such an act would not come within the scope of the homicide statutes proscribing only the unlawful killing of another."

Fred Fabro, M.D.

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Elisabeth F. S. Solomon
Executive Director

Albert M. Moss, M.D.
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Letters To The Editor

Letters to the Editor are welcomed and will be published, if found suitable, as space permits. Like other material submitted for publication, they must be type-written *double spaced* (including references), must not exceed 1½ pages in length and will be subject to editing and possible abridgment.

MORE ABOUT MALPRACTICE

To the Editor: In malpractice, the lawyers are not really "bad guys." The plaintiff's lawyer doesn't want to ruin the doctor, he just wants to make money; as much of it as possible. The defense lawyer also wants to win his case, but he doesn't want the opposing attorney put out of business either. There would then be no need for him.

Like those fixed wrestling matches on TV, the opposing lawyers put on a show of brilliant tactics and counter-attacks, like black knights and white knights in combat. For this show of trial by combat in the adversary system of the courts, the costs are so high that insurance companies go out of business, doctors go out of practice, and some doctors go on without insurance.

If the doctor is without insurance, and a judgment is made against him, he may then decide to quit practice so there may be no future income to confiscate. Even if the award is reasonable, it may go unpaid.

The liability insurance system is not designed to make a high income for lawyers, it is intended to relieve the disabled even if the question of physician-culpability is most moot. But with contingent fees, and astronomical claims of damage, all that money is used by the opposing lawyers battling bloodlessly and endlessly, but waxing wealthily. So they have killed the goose that laid the golden eggs.

It is time to start all over again and get the law out of the picture entirely. Claims of disability should be unemotionally examined without courtroom drama, and without contention. It should be done by groups of sociologists, physicians, business men and rehabilitation experts. Disability should not trigger an adversary situation in a courtroom; just as we need to abolish war we must avoid human conflict altogether. The adversary system of the courts is archaic and anachronistic, it is warlike and wasteful, the use of such a method to solve a problem of human disability is ineffective and primitive.

If someone is disabled, society must rehabilitate him and pay the cost. And pay for his sustenance at a reasonable level. But let's not make it a skunk-spray contest in court of which the only outcome is rich lawyers, duped plaintiffs and discouraged doctors. Of course some settlements are so high, that whatever trickles down to a cripple's family may still put them at a higher economic level than their earned money would have produced.

But the litigation epidemic has produced the greatest "floating permanent crap game" in history. Let's change the picture and save the money for the deserving disabled.

Sidney Vernon, M.D.

Willimantic, CT.

DRUG PRN GUIDELINES

To the Editor: Thank you for your letter of February 3 regarding publication of the joint American Society of Internal Medicine and the American Pharmaceutical Association Statement guidelines for prescriptions in the April issue of *Connecticut Medicine*.

At our February meeting, the committee, unanimously endorsed a set of suggested guidelines on interpretation of the "refill PRN" notation on prescription orders which was promulgated by the Therapeutics Committee of the New Jersey Pharmaceutical Association. These guidelines were subsequently published (*N.J. Journal Pharm.*, 47:6 (June) 1974). While these guidelines are by no means binding or restrictive on either the prescriber or dispenser of the medication, they do provide reasonable suggested times for prescription refills.

The recommended "PRN" list is:

1. Anti-Infectives:
 - a. Antibiotics—10 days, exception is tetracycline for dermatologic use—3 months.
 - b. Urinary anti-infectives including sulfa drugs—3 months.
 - c. Oral fungicidals—one year.
2. Anticoagulants—four weeks, blood must be checked for prothrombin time and dosage adjusted.
3. Anti-diabetic drugs—oral one year.
4. Anti-rheumatics—two months, exceptions phenylbutazone—one week, indomethacin—one month.
5. Anti-asthmatics—six months.
6. Antihistamines—six months.
7. Anti-Parkinson's agents—six months.
8. Cardiovascular drugs including antihypertensives and cardiac glycosides—one year.
9. Cough mixtures—three months with the exception of codeine and other schedule V narcotics—2 weeks.
10. Diuretics—as hypotensives—three months, otherwise one month.
11. Gastro-intestinal drugs—one year.
12. Hematinics—one year.
13. Hormones—six months to one year for menopause agents.
14. Muscle relaxants (skeletal)—two months.
15. Oral contraceptives—one year.
16. Ophthalmics:
 - a. Steroid and steroid combinations (local)—one month.
 - b. Anti-infectives—three months.
 - c. Ophthalmics for glaucoma, etc.—six months.
17. Psychotherapeutic agents—six months (anti-anxiety, antidepressants, etc.).
18. Steroids (oral)—two months.
19. Topical preparations:
 - a. Anti-infectives—two months.
 - b. Steroid and steroid combinations—two months.
20. Vitamins (Rx only)—one year.
21. Vaginal jellies, etc.—six months.
22. Rectal preparations—one year.

Many of your readers may not be aware that the "PRN" designation is not actually recognized as an ongoing legal authorization for refill. Most legal interpretations state that PRN should be interpreted as meaning either "no" or "one" refill. In practice, therefore, pharmacists are called upon to make a judgement often without full knowledge of the prescriber's intent.

For these reasons, the committee feels that the above guidelines will be of interest to readers of *Connecticut Medicine*.

Arthur G. Lipman, Pharm. D.
for the Joint Conference Committee

Drug Information Director
Yale-New Haven Hospital

TAKING L-DOPA TABLETS

To the Editor: Many Parkinsonians have great difficulty taking tablets of L-DOPA: their nausea produces a strong aversion to this medication. I have a way that makes it much easier to swallow the drug. I place two tablets in a soup spoon and cover them with a teaspoon of 7 UP. The L-DOPA dissolves readily and can easily be taken without producing nausea. It is my experience that no other liquid works as well as 7 UP.

Hans Rosenberg, M.D.

Bridgeport, CT.

SPECIAL NOTICES

ST. FRANCIS HOSPITAL

June 9, 1976

The Immunology Division of the Department of Laboratories is pleased to announce as a part of the continuing series of lectures on "The Current Concept and Trend in Clinical Immunology."

June 9, 1976, "*Clinical Proteinology Including Dysgammaglobulinemia*," Richard P. Propp, M.D., Clinical Associate Professor of Medicine, Albany Medical College.

TIME:	11:00 a.m. - Noon
PLACE:	Amphitheater ST. FRANCIS HOSPITAL 114 Woodland Street Hartford, CT.

FOR INFORMATION: Jayson Hyun, M.D.
Director of Immunology Laboratory,
Tel: (203) 548-4368

PATIENT ASSESSMENT OF MEDICAL CARE

1. 8 out of 10 people are either "very satisfied" or "well satisfied" with their medical care. (Source: Roper Poll and confirmed by other studies).
2. Additional evidence of satisfaction with medical care was provided by an analysis of 1974 complaints received by HEW's office of consumer complaints. Medical Care ranked 20th, far behind other service fields.
3. AMA sees two principal shortcomings in medical care:
 - A. Insufficient health insurance protection against catastrophic medical care costs.
 - B. Lack of adequate health manpower, particularly physicians, in underserved areas.

FACTS ABOUT U.S. MEDICAL CARE

1. There are 2.8 million doctor/patient consultations every day. (That doesn't include patient visits during hospital or nursing rounds).
2. 86% of the people say they have a family physician.
3. 6 out of 10 say they've seen their physician at least once in the past 6 months; 3 out of 4 have seen their doctor within the past two years.
4. On average, patient sees doctor about 5 times a year. Women about 6; men about 4. Poor people averaged about 6 visits (Source: U.S. Public Health Service survey of 116,000 persons in 40,000 homes).

No. 3 As potent as the pain it relieves.

e.g. the pain of
surgical convalescence



NOT TOO LITTLE

- as potent as the pain you need to relieve in patients with fractures, sprains, strains, wounds, contusions, and the pain of surgical convalescence
- unlike acetaminophen/codeine combinations, it does not sacrifice anti-inflammatory action

NOT TOO MUCH

- potent—yet not excessive
- addiction liability low

NOT TOO EXPENSIVE

- brand-name quality, yet reasonable in cost
- readily available in both hospital and local pharmacies

CONVENIENCE

- telephone Rx in most states, up to 5 refills in 6 months at your discretion (where state law permits)

EMPIRIN[®] COMPOUND WITH CODEINE NO. 3

codeine phosphate* (32.4 mg) gr ½
Each tablet also contains: aspirin gr 3 ½, phenacetin gr 2 ½, caffeine gr ½. *Warning—may be habit-forming.



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HEALTH AND HEALTH CARE FOR THE URBAN POOR

A study of Hartford's North End by Ray H. Elling, Ph.D. and Russell F. Martin, D.D.S., M.P.H., published by the *Connecticut Health Services Research Series*, North Haven, Connecticut. \$5.00.

The unfavorable health and health care conditions within the inner-city populations in this country have fostered some of the grossest inequities in our health care system, jeopardizing the basic human rights of the urban poor to good health and good health care. This monograph identifies and characterizes a number of these unfavorable social, cultural and economic conditions as they exist in one inner-city population settled in a geographic area of Hartford, Connecticut, known as the North End.

Although the Hartford area had one of the highest per capita incomes of any area in the country at the time of this study (1970), and could be characterized as a generally well-to-do area, Hartford's North End, an inner-city, low-income area in which the population is largely black and Puerto Rican, seemed in many ways no less afflicted with serious health and health care problems than any other similar urban area in our country.

By means of survey data based on in-depth interviews with a random sampling of the North End population ages 17-30 and supplemented with data from the 1970 U.S. Census (the two sets of data were gathered just a few months apart), the authors examine the poverty-linked characteristics in this area related to socioeconomic and health and health care conditions.

Population Composition

Hartford is a greater victim of residential segregation than many other Connecticut cities. The 1970 Census revealed that while 76.5 percent of residents in Hartford's North End were black, only 10.5 percent of all residents in the rest of Hartford were black. The racial composition of the population used in this sample is: 80.9 percent, black; 11.4 percent, Puerto Rican; 5.9 percent, white; .9 percent, other; and .9 percent, unknown.

It was also found by means of the 1970 Census that the North End had a younger population, with a heavy

concentration of adults in the childbearing years (17-44), than the rest of Hartford, and a lower proportion of adults in the elderly ages, 65 and over. The North End did not differ from the rest of Hartford in the proportion of males and females.

To summarize other population characteristics, North End residents had a larger proportion of married persons separated from their spouses than in the rest of Hartford and a lower proportion of its population was married. Furthermore, nearly every other family form was more evident in the North End except the husband-wife-child combination normative for our society.

Living Conditions

Generational differences in place of origin were not large from father to son within the North End, and the majority of respondents in this survey arrived in Hartford after the end of World War II. While the population within the North End had been fairly stable in the last 10 years, there did seem to be considerable movement within the area. The degree of mobility was probably related to the large proportion of respondents who rented, and the large proportion of respondents who reported one or more serious problems with the conditions of their housing.

The problem most frequently identified as the biggest one faced by residents of the North End was the inferior quality of housing. The rank ordering of other major problems was: (1) rats or sanitation; (2) housing costs; (3) lack of money; (4) lack of understanding among people within the community; and (5) crime. Specifically, almost two-thirds of the respondents reported that they saw rats and vermin at times; less than one quarter had any contacts with formal voluntary organizations; and a large majority expressed a fear of walking on the streets of the North End at night—in short, conditions that chronically discourage social solidarity or are indicative of its relative absence. Religious differences among races, inferior occupational and educational levels, and the stratification of social classes, with most of the North End population falling into the two lower classes, are just other unsupportive elements of social solidarity that North End residents must deal with on a daily basis.

Health Status

In order to gauge concern about health problems among North End residents, survey respondents were

RAY H. ELLING, Ph.D., Professor of Sociology, Department of Community Medicine and Health Care, University of Connecticut School of Medicine, Farmington. At the time of this study, he was principal investigator. RUSSELL F. MARTIN, D.D.S., M.P.H., Assistant Professor, Department of Behavioral Sciences and Community Health, University of Connecticut School of Dental Medicine. He was the project director and subsequently assumed the position of health planner for the Citizens' Health Action Council at the time of this study.

Summary by: SABRA BISSETTE, Associate Editor, *Connecticut Health Services Research Series*.

asked how often they suffered from a selection of symptoms taken from the Cornell Medical Index. Depression and mental health-related symptoms rated highly. Respondents were also asked to rate another list of symptoms as to their "medical seriousness"; and a hierarchy of concern over these symptoms was discovered. A number of social characteristics—such as education, social class, race—and other factors—such as worries over medical costs and recency of arrival in the North End—were found related to concern over each symptom. Those characteristics suggesting greater deprivation were curiously related to greater concern for some of the common symptoms, such as head cold, while those same social characteristics went with lack of concern for the more uncommon and medically serious symptoms, such as increasing swelling of the ankles.

Sophistication about several indices of maternal and child health—timing of prenatal care, sources of birth control information, shots or vaccinations a child should have by age five, knowledge of the dangers of lead poisoning—was found related to a number of factors (education, social class, race, etc.) that showed a person's position in the social and cultural network.

Whenever comparable data could be found, the North End in general was characterized by higher mortality and morbidity rates than the United States, Connecticut and the rest of Hartford. And, within the North End, there were tendencies (not statistically significant) for social class to relate to general disability. Indices pinpointing poverty conditions, however—welfare status and low income—more closely showed significant relationships with reported disability, even with social class and race controlled.

The relationships for disability among children were similar. Living in a household made up of a single adult female and children was also related to disability among children, as was having moved in the last five years.

Depression (feeling life is sad and hopeless) was not related to race, but did show a significant relationship to social class. Depression was also found to be related to being on welfare, low income, and the number of rooms per person in living quarters.

Medical Care

Within the North End, race and social class were the factors most notably related to various aspects of medical care—receipt of any care, delay, initial approach to care, source of care (hospitals or community practitioners), reported length of wait, satisfaction, and expected central source of care in the

future. Some interesting findings were that, in general, persons in lower social classes and Puerto Ricans were more oriented toward care in hospitals, while those in the higher classes and blacks and others were more oriented toward community practitioners. Also, those without health insurance of any kind were more likely to experience longer delays in receipt of care after the onset of a disabling illness. Some respondents suggested that the improvement of the environment, reorganization of services, improved payment schemes and health education might help medical care delivery in the North End, but many respondents did not know what to suggest.

Proposal for the Future

Based on the major disparities in levels of health and health care documented in this study between the North End and the rest of Hartford, the authors have outlined a proposal for a model system of health care to overcome these disparities—a system depending heavily on the concept of the neighborhood-based, neighborhood-oriented care team. This proposal is based on a survey of the roles and attitudes, discussed in this study, of the state university, area hospitals, health service providers and the citizens themselves. The authors point out that the major task in such a plan would be the organization of the population itself to contribute to the solution of its own problems. The founding and subsequent failure of one organization devoted to such a purpose (Citizens' Health Action Council) is described along with the implications for the future of the North End population's health and health care status.

According to the authors, "It was and is our hope that this study will contribute to a better understanding of some of these dimensions of health care and thereby stimulate and facilitate action toward the provision of more adequate health care to the people of the North End, other inner-city areas of Hartford, and possibly similar areas of Connecticut and across the country."

The CHSRS

"Health and Health Care for the Urban Poor," is the fifth monograph to be published in the Connecticut Health Services Research Series. The CHSRS is a community-based monograph series focusing upon research in the organization, utilization, and financing of health services that is jointly sponsored by Connecticut Blue Cross, Connecticut Commission for Higher Education, Connecticut Hospital Association, Connecticut Regional Medical Program, Connecticut State Department of Health, Connecticut State Department of Welfare, Connecticut State Medical Society, University of Connecticut School of Medicine and Yale University School of Medicine.

FROM THE EXECUTIVE DIRECTOR'S OFFICE

160 St. Ronan Street, New Haven, Conn. 06511

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Francis G. Sweeney
*Assistant Executive Director
Public Affairs*

William R. Richards, M.D.
Executive Director
Josephine P. Lindquist
Associate Executive Director

Leonard R. Tomat
*Assistant Executive Director
Scientific Activities*

Summary of Actions

Council Meeting

Wednesday, March 24, 1976

I. Attendance

Present in addition to the Chairman, Dr. D. A. Grendon, and the Vice Chairman, Dr. Jerome K. Freedman, were: Drs. Van Syckle, Spitz, Friedberg, Backhus, Nolan, Root, Jr., Hess, Cramer, Granoff, Canzonetti, Kamens, Rubinow, James, Ragland, Jr., Krinsky, Sonnen, McGarry, Beck, Robinson, Harkins, Magram, Mendillo, Eslami, Barrett and Whalen.

Also present were: Mrs. Lindquist, Mr. Tomat, Mr. Sweeney, Steven Bongard, Ph.D. (UConn) and Dr. Richards.

Absent were: Drs. Johnson, Bradley, Fabro, Klare, Dambeck and Ahrens.

II. Routine Business

Approval of Minutes

As published and distributed, it was VOTED to approve the minutes of the meeting of February 25, 1976.

Life Memberships

It was VOTED to approve applications for Life Membership received from the following eligible Active Members:

Robert D. Baird, 30 Park Lane East, New Milford
Armand R. LaPierre, 5 Clinic Drive, Norwich
Christie E. McLeod, 466 Maple Shade Road, Middletown

Bernard O. Nemoitin, 96 Main Street, Stamford
Hans H. Neumann, 1 State Street, New Haven
Leo M. Smith, 8 Hillcrest Road, Old Greenwich

Date of Next Meeting

Unless it is necessary to hold a meeting in April, at the call of the Chairman, the next meeting of the Council has been called by the incoming President, Hilliard Spitz, for Wednesday, May 19, 1976.

III. Old, New and Special Business

Election of Student Members

It was VOTED to elect to Student Membership the following Connecticut residents:

Chih Jung Shieh, 64 Robbins Street, Waterbury, Conn.

Taipei Medical College—Class of 1973

Parent: Yiu Ying Shieh

Michael Goldfarb, 103 Parsons Drive, West Hartford, Conn.

Georgetown University School of Medicine—
Class of 1978

Pre-Med: University of Hartford

Parent: David Goldfarb

Resolution re Norman H. Gardner, M.D.

It was VOTED to approve the draft of a subject resolution and to transmit same to the House of Delegates with Council recommendation for adoption by the House. It was further voted that the resolution, as adopted by the House of Delegates, be printed and suitably framed for presentation to Mrs. Gardner and family, and that a copy of the resolution be transmitted to the House of Delegates of the AMA.

Resignations, Appointments, Etc.

(a) *Committee to Study Perinatal Morbidity and Mortality*: It was VOTED to accept the resignation of Orvan W. Hess, New Haven, from membership on the Committee. It was further VOTED to appoint Gerard J. Foye, Brookfield, to replace Dr. Hess as a Committee member and to amend accordingly the slate of nominees to be presented to the House of Delegates on 4/28/76.

(b) *Chairman, Committee on Public Health*: It was VOTED to accept for filing a letter received from Marjorie A. Purnell, Rockville, in which she informed the Council of her desire to be relieved of the Committee chairmanship for 1976-77. It was further VOTED to defer action on Dr. Purnell's

request and to ask her to reconsider her decision and to accept the chairmanship for at least one more year.

- (c) *Delegation to Meet with Governor re P.L. 93-641:* Pursuant to the Council's directive of 2/25/76, the Chairman announced that, after consultation with the President, he had appointed Guy W. Van Syckle, Danbury, Orvan W. Hess, New Haven, and Andrew J. Canzonetti, Waterbury, as a three-member delegation to seek audience with Governor Grasso to talk over her plans for the makeup of the statewide agency called for by P.L. 93-641 and to convey to her the importance of affording M.D.s meaningful input into the HSA program. Dr. Van Syckle will be asked to serve as chairman of the delegation.

Requests—Committee on the Medical Aspects of Sports

Increasing Committee Strength: It was VOTED to approve a recommendation of the Committee that its authorized strength be increased from 12 members to 15 members, and to recommend approval of same by the House of Delegates on 4/28/76.

Request—Committee on Public Relations

Having received a favorable funding report from the Fiscal Subcommittee, the Council VOTED to authorize the expenditure of up to \$310.00 for 2,000 published pamphlets describing the "Heimlich Maneuver" for emergency treatment of persons choking on food. Having purchased an initial supply of 200 pamphlets, the Committee undertook a pilot project of offering the public (via a news release) a free copy on request. The Committee reported that, within the first three days following the announcement, nearly four hundred requests for copies had been received.

Petition to Establish Section on Surgery

Finding the subject petition to be in order, the Council VOTED to approve the establishment of a Section on Surgery of the Society's Scientific Assembly and to recommend similar approval by the House of Delegates on April 28, 1976.

Acknowledgements—1976 Contributions to CSMS Medical Student Financial Aid Fund

It was VOTED to receive as information letters received from officials at the Yale and UConn medical schools acknowledging, with thanks, receipt of \$4,000 each as the Society's 1976 contribution to the CSMS Medical Student Financial Aid Fund which was initiated by the House of Delegates in 1972.

Report—Liaison Committee with Connecticut Pharmaceutical Association

It was VOTED to approve a report of the Committee on its study of a resolution of the Greenwich Medical Society (introduced by Edith M. Beck, FCMA Associate Councilor) which proposed that legislative action be initiated to allow a hospital emergency room—being open twenty-four hours a day—to dispense medication to non-hospital patients on the prescription of physicians having staff appointments at the hospital when all local (retail) pharmacies are closed, with the proviso that medications so dispensed would be limited to a maximum of four doses. The report pointed out that prescriptions must be filled by a registered pharmacist (hospital or retail), whether during the day or at night, and that legislative action to authorize non-pharmacists working in an emergency room would undoubtedly come to naught. Instead, the report advocated that the Greenwich Medical Society discuss with representatives of the area retail pharmacists the possibility of working out an arrangement under which at least one retail store each night would provide 24 hour coverage. The Committee learned from the pharmacists who serve on the CSMS-CPA Conference Committee that this solution to the problem had proven successful in a number of communities throughout the state. It was further VOTED to notify the Greenwich Medical Society of this recommendation; also the component County Medical Associations with a request that they promote similar arrangements, when indicated, in the communities within their jurisdiction; also the Connecticut Pharmaceutical Association.

Recommendation—Committee on Professional Liability

It was VOTED to receive as information a recommendation of the Committee "that the Society have only one committee devoted to the study of professional liability."

Recommendation—Committee on Medical Aspects of Sports

On recommendation of the Committee, the Council VOTED to endorse the concept that "an athletic trainer program, at both undergraduate and postgraduate levels, be included in the curricula of the University of Connecticut at Storrs, the purpose of which would be to prepare qualified and competent people to fill the expressed need for paramedical personnel to function in interscholastic and intercollegiate sports programs."

Request—Committee on Mental Health

It was VOTED to defer action on a request of the Committee "for permission to consult with CSMS

legal counsel concerning provisions of P.A. 75-215—An Act Concerning Insurance Coverage for Mental and Nervous Conditions in Group Health Insurance Policies,” with particular reference to whether the words “medical benefits” restrict the payment of medical benefits only to the medical profession or may payments be made directly to allied medical personnel involved in the care of patients with mental or nervous conditions. It was further VOTED to recommend to the Committee that a subject opinion be sought and received from the State Insurance Commissioner, as he interprets the wording of the law, after which the request for consultation with CSMS legal counsel will be reconsidered by the Council if necessary.

Preliminary Report—CHHC Task Force on Primary Care

The Council members were joined by Howard K. Wetstone, chairman of the Task Force, and James E. C. Walker, chairman of the Subcommittee on Distribution of Physicians, who presented a preliminary report on the Task Force’s study of the “Character and Distribution of Primary Care Physicians in Connecticut.” The full report will be filed with the Commission on Hospitals and Health Care in early April. In addition to describing the techniques and data sources used in the Study, the speakers also touched on some of the conclusions and recommendations that will appear in the full report to the Commission. In brief, the findings of the Study indicate that there is

no shortage of primary care physicians on a statewide basis, but that some areas are over-served and that a number of areas are grossly underserved; i.e., that the uneven distribution of primary care physicians and access to their services constitute problems that require attention.

Request—Committee on Continuing Medical Education

It was VOTED to approve a request of the Committee that the Society sponsor a halfday workshop on “Planning CME in the Community Hospital,” to be held at the Connecticut Health Center, Farmington, 5/5/76, with the understanding that the workshop expenses will be met fully by a registration fee and there will be no funds provided by the Society.

In Memoriam—David S. Hastings, M.D.

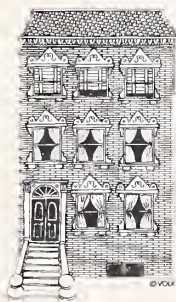
Having been informed that David S. Hastings, Stafford Springs, had died on March 5, 1976, the members of the Council stood for a moment of silent tribute to the memory of an esteemed colleague and valued friend. Dr. Hastings served several terms on the Council as a representative of the Tolland County Medical Association.

N.B.: *The foregoing is a summary of the proceedings and actions of the Council on March 24, 1976. Detailed minutes of the meetings are on file at 160 St. Ronan Street, New Haven, for perusal by any interested member of the Society.*

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Blue Cross
of Connecticut

Month in Washington

Continued from page 339

sponsored by Arthur D. Little, Inc., a Cambridge, Mass., consulting and research outfit.

"The cost is becoming prohibitive," declared Charles Edwards, M.D., former Assistant HEW Secretary for Health. "The U.S. health care system is headed toward fundamental changes that are certain to occur and sooner than most expect." Dr. Edwards warned he predicted health care will cost \$135 billion next year. \$600 for every person in the country.

Declaring that this decade for physicians could be called the "showdown seventies," Malcolm C. Todd, M.D., Immediate Past President of the AMA told the conference of business and health leaders that he hoped for a "proper accommodation" between the medical profession and the federal government. Unless a pluralistic system is retained, Dr. Todd warned, "federally inspired chaos" could emerge.

"There could be a vicious circle . . . with programs foundering on their own shortcomings and blunders . . . and government blaming doctors and hospitals for the failures in order to justify even more repressive programs," he said.

A study was released by the Arthur D. Little firm estimating that the passage of national catastrophic health insurance would add \$4.5 billion to 1980 expenditures for principal health care products and services. If no new national health coverage becomes effective, spending for health care is expected to grow at an average annual rate of four percent over the next five years, or from \$98.8 billion in 1975 to \$112 billion in 1980, the study said.

Enactment of national comprehensive health insurance, which Little said is not regarded as very likely to happen before 1980, would increase health care spending by 12 percent of \$13.6 billion, for an annual total of \$125.6 billion in five years.

Commenting on the study, Dr. Todd said, "It confirms that any of the national health insurance programs before the Congress will result in greater utilization by patients and thus increased expenditures."

Lawrence Hill, Executive Vice President of the American Hospital Association, said that the future holds "more expenditures, rising costs, concern with those expenditures, and costs leading to attempts to control by price controls and by tinkering with the delivery system."

Hill foresaw a collision between rising costs and "capped" prices. Hospitals, he said, might have little option but to limit services. "Lines of doctors and patients will form and the hospital will patrol these, admitting as resources allow."

Before prescribing, please consult complete product information, a summary of which follows:

Indications: In adults, urinary tract infections complicated by pain (primarily pyelonephritis, pyelitis and cystitis) due to susceptible organisms (usually *E. coli*, *Klebsiella-Aerobacter*, *Staphylococcus aureus*, *Proteus mirabilis*, and, less frequently, *Proteus vulgaris*) in the absence of obstructive uropathy or foreign bodies. **Note: Carefully coordinate in vitro sulfonamide sensitivity tests with bacteriologic and clinical response; add aminobenzoic acid to follow-up culture media. The increasing frequency of resistant organisms limits the usefulness of antibacterials including sulfonamides.** Measure sulfonamide blood levels as variations may occur; 20 mg/100 ml should be maximum total level.

Contraindications: Children below age 12; sulfonamide hypersensitivity; pregnancy at term and during nursing period; because Azo Gantanol contains phenazopyridine hydrochloride it is contraindicated in glomerulonephritis, severe hepatitis, uremia, and pyelonephritis of pregnancy with G.I. disturbances.

Warnings: Safety during pregnancy not established. Deaths from hypersensitivity reactions, agranulocytosis, aplastic anemia and other blood dyscrasias have been reported and early clinical signs (sore throat, fever, pallor, purpura or jaundice) may indicate serious blood disorders. Frequent CBC and urinalysis with microscopic examination are recommended during sulfonamide therapy.

Precautions: Use cautiously in patients with impaired renal or hepatic function, severe allergy, bronchial asthma; in glucose-6-phosphate dehydrogenase-deficient individuals in whom dose-related hemolysis may occur. Maintain adequate fluid intake to prevent crystalluria and stone formation.

Adverse Reactions: *Blood dyscrasias* (agranulocytosis, aplastic anemia, thrombocytopenia, leukopenia, hemolytic anemia, purpura, hypoprothrombinemia and methemoglobinemia); *allergic reactions* (erythema multiforme, skin eruptions, Stevens-Johnson syndrome, epidermal necrolysis, urticaria, serum sickness, pruritus, exfoliative dermatitis, anaphylactoid reactions, periorbital edema, conjunctival and scleral injection, photosensitization, arthralgia and allergic myocarditis); *G.I. reactions* (nausea, emesis, abdominal pains, hepatitis, diarrhea, anorexia, pancreatitis and stomatitis); *CNS reactions* (headache, peripheral neuritis, mental depression, convulsions, ataxia, hallucinations, tinnitus, vertigo and insomnia); *miscellaneous reactions* (drug fever, chills, toxic nephrosis with oliguria and anuria, periarteritis nodosa and L.E. phenomenon). Due to certain chemical similarities with some goitrogens, diuretics (acetazolamide, thiazides) and oral hypoglycemic agents, sulfonamides have caused rare instances of goiter production, diuresis and hypoglycemia. Cross-sensitivity with these agents may exist.

Dosage: Azo Gantanol is intended for the acute, painful phase of urinary tract infections. *Usual adult dosage:* 2 Gm (4 tabs) initially, then 1 Gm (2 tabs) B.I.D. for up to 3 days. If pain persists, causes other than infection should be sought. After relief of pain has been obtained, continued treatment with Gantanol (sulfamethoxazole) may be considered.

NOTE: Patients should be told that the orange-red dye (phenazopyridine HCl) will color the urine.

Supplied: Tablets, red, film-coated, each containing 0.5 Gm sulfamethoxazole and 100 mg phenazopyridine HCl—bottles of 100 and 500.



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AMA Auxiliary Holds Eastern Regional Meeting In New York City

The eastern regional meeting of the auxiliary to the American Medical Association was held February 16-17, 1976, at the Waldorf Astoria in New York City. Eastern regional state presidents-elect and state nominated presidents-elect were invited to the meeting. State presidents attendance was optional. The eastern regional meeting was held to acquaint those who attended with national board representatives, each other, and the program that is planned for the coming auxiliary year. "Two-way feedback" to the national board by those attending was an integral part of the meeting's program. Mrs. George Roch, Connecticut's president, and Mrs. Mehadin K. Arafeh, Connecticut's president-elect, attended.

Mrs. Daniel Anderson, regional vice president and moderator of the meeting, officially opened the gathering at 2 p.m. on February 16. She introduced Mrs. Erle E. Wilkinson, national president, who spoke about the auxiliary and its structure. She noted the absence of Mrs. Norman H. Gardner, national president-elect, whose husband, Dr. Norman H. Gardner, passed away on February 9. Mrs. Wilkinson and other national board members had attended a memorial service, which was held on Sunday, February 15, in East Hampton, CT.

Mrs. Lee E. Rice, first vice president and membership, presented membership information. She mentioned (1) a new pin which says, "Join Us—We Can Do More Together," (2) a new brochure, "AMA Auxiliary Facts," (3) a new book for members, "The Membership Idea Book," and (4) "Traveling Membership Exhibit" available for loan. Membership goals, plans, and committee composition were explained. Bylaws changes, to coincide with the recent structural modification, were discussed by Mrs. Chester L. Young, second vice president, national bylaws, and recently-

nominated national president-elect. In conclusion, Hazel J. Lewis, executive director, reported to the group the present status of the auxiliary's Chicago headquarters and its official structure.

Those attending the meetings were divided into "Talk-Ins"; Connecticut was part of a subdivision group which included Maryland, Massachusetts, Virginia, West Virginia and Rhode Island. Mr. Rice conducted the session from 2:45 to 5 p.m. while Mrs. Wilkinson, Mrs. Young, Mrs. Anderson, and Hazel Lewis visited individually. These small group sessions gave opportunity for more direct communication among participants and national board leaders. Topics discussed included membership, organization, parliamentary procedure, "MD's Wife," legislation, health education, project bank, national meetings, foreign doctor wives, AMA-ERF, and communications.

During "Dinner on the Town" that evening, there were many opportunities to exchange views with other "states."

Next morning's breakfast session was opened with a grace given by Mrs. Roch, Connecticut's president. Mrs. Gardner's plans for 1976-1977 were presented for her by Mrs. Young. Six national board positions were announced; area counselors will be appointed later. The "Auxiliary Guide, Vol. II" was mailed in April, along with more "Project Bank Catalogues." There will be no "national theme" this year, Mrs. Wilkinson announced.

The previous day's "Talk-Ins" were continued in small groups from 10 a.m. to 12 noon. Luncheon followed and Mrs. Wilkinson presided. She encouraged open discussion with the national officers present.

Recorders from each "Talk-In" group gave reports followed by a self-evaluation of the meeting. Most participants were enthusiastic about the new format. At 3 p.m. members adjourned with "hope and good faith in their hearts" and "knowledge and vision in their heads."

OBITUARIES

Norman H. Gardner, M.D. 1909-1976

Dr. Norman H. Gardner died February 9, 1976 at the age of 66.



He was graduated from Tufts Medical School in 1934. He interned at Meriden Hospital in 1934. Dr. Gardner selected the relatively small community of East Hampton as the site of his practice in 1935. He served as medical examiner and health director for thirty-three years.

He was a member of the staff at Middlesex Memorial Hospital.

A great humanitarian, he gave of himself wholeheartedly, to his community and to the neighboring Town of Marlborough as well. He served as health director there for fifteen years.

His unsought reward won him national acclaim and the gratitude that goes with honors so richly deserved. His great interest in organized medicine, while carrying on a most active practice, gained him recognition locally when he was elected president of the Central Medical Association and the Middlesex County Medical Association.

Dr. Gardner was president of the Connecticut State Medical Society from 1968 to 1969. He served eighteen years on the Council and in this position as a

member of the State's Society House of Delegates, he distinguished himself with his knowledge, experience and organizational ability.

He was vice president of the American Medical Association from 1972 to 1973. Through this latter office, he became a member of the Board of Trustees during tenure and also a permanent member of the House of Delegates. During his years as the Connecticut State Medical Society's delegate to the AMA he also served with distinction as chairman of the New England delegation for two years, on the AMA Council on Rural Health for more than seventeen years, vice chairman of the AMA Council on Governmental Medical Service, a representative of its national health council and chairman of the AMA Reference Committee on Disability Insurance.

He was a charter member of the Connecticut Academy of General Practice and the American Academy of General Practice.

He also served as a representative to the Advisory Board of the Connecticut Regional Medical Program, Committee on National Legislation and was appointed by former Governor Thomas J. Meskill to the Connecticut Public Health Council in 1972.

Dr. Gardner's professional bearing brought with it a radiant personality and an ever-present sense of good humor. He did, indeed, foster the noblest principles and traditions of the profession, dedicating himself to follow the Golden Rule, placing the welfare of patients always before his own. He always remained close to his Middlesex County Medical Association and was its outstanding exponent of organized medicine, programs and projects on the local, state and national levels.

His colleagues and associates, both on the staff of the Middlesex Memorial Hospital and in many other areas, held him in the highest esteem.

A long-time member of the Congregational Church of East Hampton, he was chairman of its Board of Trustees for three terms.

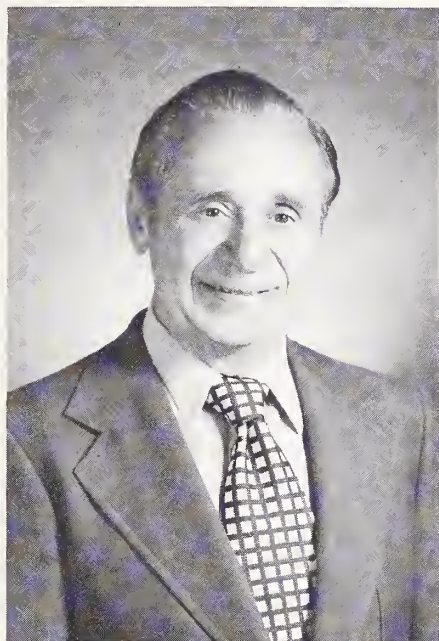
He is survived by his widow, the former Elizabeth McKenzie and four children, Norman, Jr., Cynthia Bevin, Sherrill Beaulieu and David.

Dr. Gardner's full active life was exemplary and is the best possible memorial to him, his noble family and to those who worked with him, sharing his joys and sorrows and inspired by his deep abiding faith.

Harold E. Speight, M.D.

Charles M. D'Alessio, M.D.
1911-1976

Dr. Charles M. D'Alessio, born March 20, 1911 in Derby, Connecticut, died after an apparent heart attack on February 11, 1976.



He was a graduate of Niagara University and the University of Maryland Medical School. Dr. D'Alessio was a general practitioner for several years followed by radiology training at Hospital of St. Raphael. Thereafter, he became Chief of Radiology at Griffin Hospital and for the past ten years was associated with Radiology Group, P.C. He was a member of the New Haven County, Naugatuck Valley Medical Society, American Medical Association, American College of Radiology and Connecticut State Radiological Society.

During World War II, he was a surgeon with the 32nd Infantry Division in the Philippines, with the rank of Captain. He received a Bronze Star for meritorious service during the Leyte operation in the Philippines.

Besides his wife, he leaves four daughters, Sister Anne D'Alessio of the Apostles of the Sacred Heart, Rosemary, Charlene and Jean D'Alessio, all of New Haven.

Charlie will be missed by his family members and his many friends in this area. He exhibited beloved characteristics such as humility, intellect, humor, financial acumen and friendliness. The medical community was enriched by his presence and his great loss will not be forgotten by any of us.

Carl V. Pantaleo, M.D.

In Memoriam

Hastings, David S., Boston University, 1953. Dr. Hastings was a general practitioner in the Tolland area since 1957. He was health officer for the town of Stafford, the borough of Stafford Springs, and for the town of Union, Ashford and Willington. He also was the town of Stafford's school physician and was a past president of Johnson Memorial Hospital. He was a member of the Tolland County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Hastings died March 5, 1976, at the age of 48.

Lieberman, David L., N.Y.U. Medical Center, 1926. Dr. Lieberman was a general practitioner in the Middlesex area since 1934. Dr. Lieberman served in the Army Medical Corps in World War I and World War II and served as director of the New Britain Memorial Hospital. He was also a staff member of Middlesex Memorial Hospital and Rocky Hill Veterans Hospital. In 1957 he founded Chesterfield's Convalescent Hospital and remained as director until his death. Dr. Lieberman died March 11, 1976, at the age of 75.

Rosenbaum, George J., Tufts University, 1934. Dr. Rosenbaum was a general practitioner in the Hartford area since 1935. During World War II he served in the U.S. Navy with the rank of Lt. Commander and saw service in the European theatre. He was a staff doctor at Mt. Sinai Hospital and was on the courtesy staff of St. Francis and Hartford Hospitals. He was a member of the Hartford County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Rosenbaum died March 21, 1976, at the age of 67.

Schopick, Louis E., University of Zurich, 1935. Dr. Schopick was a general practitioner in the Fairfield area since 1935. He was a U.S. Army veteran of World War II and was a member of the Fairfield County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Schopick died February 27, 1976, at the age of 69.

Wieler, Harry J., College Physicians & Surgeons, N.Y., 1923. Dr. Wieler was a general practitioner in the Litchfield area since 1934, until his retirement in 1969. He served as a captain of field artillery in France in World War I, and had been resident physician at The Hotchkiss School from 1927 to 1955 and had planned the school's infirmary which was known as Wieler Hospital in his honor. He was a member of the Litchfield County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Wieler died February 28, 1976, at the age of 84.



Testing in Humans: Who, Where & When.

the weight of ethical opinion:

Few would disagree that the effectiveness and safety of any therapeutic agent or device must be determined through clinical research.

But now the *practice* of clinical research is under appraisal by Congress, the press and the general public. Who shall administer it? On whom are the products to be tested? Under what circumstances? And how shall results be evaluated and utilized?

The Pharmaceutical Manufacturers Association represents firms that are significantly engaged in the discovery and development of new medicines, medical devices and diagnostic products. Clinical research is essential to their efforts. Consequently, PMA formulated positions which it submitted on July 11, 1975, to the Subcommittee on Health of the Senate Labor and Public Welfare Committee, as its official policy recommendations. Here are the essentials of PMA's current thinking in this vital area.

1. PMA supports the mandate and mission of the National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research and offers to establish a special committee composed of experts of appropriate disciplines familiar with the industry's research methodology to volunteer its service to the Commission.

2. PMA supports the formation of an independent, expert, broadly based and representative panel to assess the current state of drug innovation and the impact upon it of existing laws, regulations and procedures.

3. When FDA proposes regulations, it should prepare and publish in the *Federal Register* a detailed statement assessing the impact of those regulations on drug and device innovation.

4. PMA proposes that an appropriately qualified medical organization be encouraged to undertake a comprehensive study of the optimum roles and responsibilities of the sponsor and physician when company-sponsored clinical research is performed by independent clinical investigators.

5. PMA recognizes that the physician-investigator has, and should have, the ultimate responsibility for deciding the substance and form of the informed consent to be obtained. However, PMA recommends that the sponsor of the experiment aid the investigator in discharging this important responsibility by providing (1) a document detailing the investigator's responsibilities under FDA regulations with regard to patient consent, and (2) a written description of the relevant facts about the investigational item to be studied, in comprehensible lay language.

6. In the case of children, the sponsor must require that informed consent be obtained from a legally appropriate representative of the participant. Voluntary consent of an older child, who may be capable of understanding, in addition to that of a parent, guardian or other legally responsible person, is advisable. Safety of the drug or device shall have been assessed in adult populations prior to use in children.

7. PMA endorses the general principle that, in the case of the mentally infirm, consent should be sought from both an understanding subject and from a parent or guardian, or in their absence, another legally responsible person.

8. Pharmaceutical manufacturers sponsoring investigations in prisons must take all reasonable care to assure that the facilities and personnel used in the conduct of the investigations are suitable for the protection of participants, and for the avoidance of coercion, with a respect for basic humanitarian principles.

9. Sponsors intending to conduct non-therapeutic clinical trials through the participation of employee volunteers should expand the membership and scope of its existing Medical Research Committee, or establish such an internal Medical Research Committee, with responsibility to approve the consent forms of all volunteers, designs, protocols and the scope of the trial. The Committee should also bear responsibility to ensure full compliance with all procedures intended to protect employee volunteers' rights.

10. Where the sponsor obtains medical information or data on individuals, it shall be accorded the same confidential

status as provided in codes of ethics governing health care professionals.

11. PMA and its member firms accept responsibility to aid and encourage appropriate follow-up of human subjects who have received investigational products that cause latent toxicity in animals or, during their use in clinical investigation, are found to cause unexpected and serious adverse effects.

12. PMA supports the exploration and development by its member companies of more systematic surveillance procedures for newly marketed products.

13. When a pharmaceutical manufacturer concludes, on the basis of early clinical trials of a basic new agent, that a new drug application is likely to be submitted, a proposed development plan accompanied by a summary of existing data, would be submitted to the FDA. Following a review of this submission, the FDA, and its Advisory Committee where appropriate, would meet with the sponsor to discuss the development plan. No *formal* FDA approval should be required at this stage. Rather, the emphasis should be on identification of potential problems and questions for the sponsor's further study and resolution as the program develops.

The PMA believes that health professionals as well as the public at large should be made aware of these 13 points in its Policy on Clinical Research. For these recommendations envisage constructive, cooperative action by industry, research institutions, the health professions and government to encourage creative and workable responses to issues involved in the clinical investigation of new products.



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The Society maintains the Physician Placement Service as a service to the medical profession in the State of Connecticut. Opportunities for physicians to locate in Connecticut will be published as space permits and will be distributed to physicians making inquiry of such opportunities. Information should be sent to 160 St. Ronan Street, New Haven, Connecticut 06511, (203-865-6822).

Physicians wishing to establish practice in Connecticut are invited to submit a resume to be kept on file with the Society. An announcement of a physician's availability will be published in two consecutive issues of *Connecticut Medicine*.

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Surgery: General Surgery and/or General Practice. Wishes to locate in Conn. Trained in Canada and Ireland. Permanent USA resident. Nine years experience in general practice with surgery in emergency and family medicine.

Surgery: General. Available July 1976. Board eligible. M.D. from St. Louis University School of Medicine. Internship and residency at University of Connecticut. Presently in the U.S. Army. James L. Massi, M.D., 24 Hemphill Road, Eatontown, NJ. 07724.

Surgery: General. FLEX. N.Y. License, Board eligible. Residency at Albert Einstein College of Medicine. Desires group, associate or institutional practice. Available July 1976. S. K. Moza, M.D., 1819 Williamsbridge Road, 2A, Bronx, NY. 10461.

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Cardiology: Available July 1976. Completing Fellowship at Howard University. Graduate of Medical School in Cairo, Egypt. Trained in EKG's, CCU, coronary arteriograms. I.A. Sarris, M.D., 6511 Landover Road, No. 204, Cheverly, MD. 20785.

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OB/GYN: Group or associate practice. FLEX. Board eligible. Trained in Korea. Residency at Wyckoff Hospital, Brooklyn. Hoon Yoo, M.D., 950 49th Street, Brooklyn, NY. 11219.

Ophthalmology: Board certified. FLEX. Completed fellowships at Brooklyn Eye and Ear Hospital and B.U. Medical Center. Husband is a urologist. Both wish to practice in same area. Meenakshi M. Desai, M.D., 254 Liberty Street, Danville, PA. 17821.

Ophthalmology: Board eligible. Diplomate of National Board. Available July 1976. New Jersey College of Medicine. Completing residency at Beth Israel Medical Center. Lawrence Frieman, M.D., 353 E. 17th Street, Apt. 20-F, NY, NY. 10003.

Ophthalmology: Board eligible. FLEX. Available July 1976. Trained in intraocular lens implantation. Completing fellowship at University of Manitoba, Canada. Trained at the University of Louvain, Belgium. Beth Israel Hospital, N.Y.C., U.S. citizen. Joel M. Reisman, M.D., Dept. of Ophthalmology, H604, Health Science Center, 700 William Ave., Winnipeg, Manitoba, Canada R3E 0Z3.

Family Practice: Available July 1976. Passed National Boards. Desires salaried position. Graduate of Sarah Lawrence College, New York University School of Medicine, Montefiore Hospital Family Practice Program. Connecticut license. Marji Gold, M.D., 3396 Wayne Avenue, Bronx, N.Y. 10467.

Family Practice: Available now. Applying for Connecticut license. Relocating from California. Graduate of Holy Cross, Yale University School of Medicine. 36 years old. Michael D. Gorman, M.D., 83 Old Colony Road, Stamford, CT. 06907. 1-322-4620. Solo, group, associate or institutional practice will be considered.

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Internal Medicine (Endocrinology): Board eligible. Group practice in larger community. 31 years old. Available July 1976. Completing fellowship at Cincinnati General Hospital. Graduate of University of Maryland. Michel Susan Foster, M.D., 730 Riddle Road, #109, Cincinnati, O. 45220.

Internal Medicine: Available July 1976. Family located in Fairfield. Would prefer group or institutional practice within 25 mile radius. Graduate of University of Maine, Medical College of Pennsylvania. Has been in New Haven area (74-76) on fellowship. Write CSMS for resume.

Internal Medicine (Endocrinology): Available July 1976. Wishes to join one or more internists in private practice. Teaching opportunity desired. Completing fellowship at Montefiore Hospital. Daniel P. Hoffman, M.D., 11 Hillview Avenue, Yonkers, NY 10704.

Internal Medicine: Primary care. Available July 1976. Connecticut license. Completing fellowship in nephrology at Yale. Solo or associate type coverage. 30 years old. Board certified. Desires to remain in Connecticut. Contact CSMS.

Internal Medicine (Pulmonary): Board certified. Desires medium sized community. General medicine with subspecialty. Graduate of Fairfield University, M.D. from Georgetown. Available July 1976. William Lavin, M.D., 3001 W. Eastwood Avenue, Chicago, IL. 60625.

Internal Medicine (Nephrology): Group practice preferably in the Hartford-Farmington area. Available July 1976. FLEX. Adarsh Luthra, M.D., 1510-D Clarkson Road, Richmond, VA. 23224.

Internal Medicine (Gastroenterology): Desires group or associate practice. FLEX. Board eligible. Completing fellowship at Nassau County Medical Center, Long Island. Niles Rana, M.D., 230 Fairhaven Dr., Jericho, NY. 11753.

Internal Medicine: Available August 1976. Desires Litchfield, Windham or New London area. Completing residency at Hahnemann Medical Hospitals. Leslie Mark Reiner, M.D., Apt. 133A, 801 Cooper Street, Woodbury, NJ. 08096.

Internal Medicine: Available July 1976. Board eligible. Associate or group practice. Completing training at Medical College of Ohio at Toledo. Robert J. Rubano, M.D., 3102 Glencairn Avenue, Toledo, O. 43614.

Internal Medicine (Hematology-Oncology): Completing training at Cook County Hospital, Chicago. Board eligible. Nalin S. Soni, M.D., 1926 W. Harrison, Apt. 1304, Chicago, IL. 60612.

Ophthalmology: Board eligible. Available July 1976. Completing residency at NYU-Bellevue Medical Center. 27 years old. Howard M. Silverstein, M.D., 442 East 20 Street, Apt. 3H, NY, NY. 10009.

Ophthalmology: Board eligible. Completing residency at New York Medical College. Graduate of Cornell and Albert Einstein College of Medicine. Normal Wald, M.D., 80 Midchester Avenue, White Plains, NY.

Internal Medicine: Connecticut license. Available May 1976. Board eligible. Trained at Taipei Medical School. Internship and residency at St. Mary's Hospital in Waterbury, 1972-75. Presently employed in Connecticut. Contact CSMS.

Internal Medicine: Available July 1976. Connecticut license. Completing residency at St. Raphael's. Desires to remain in Connecticut in hospital based program or clinic; primary care group; ER. Board eligible. 30 years old. M.D. from University of Louisville, Kentucky. Resume on file at CSMS.

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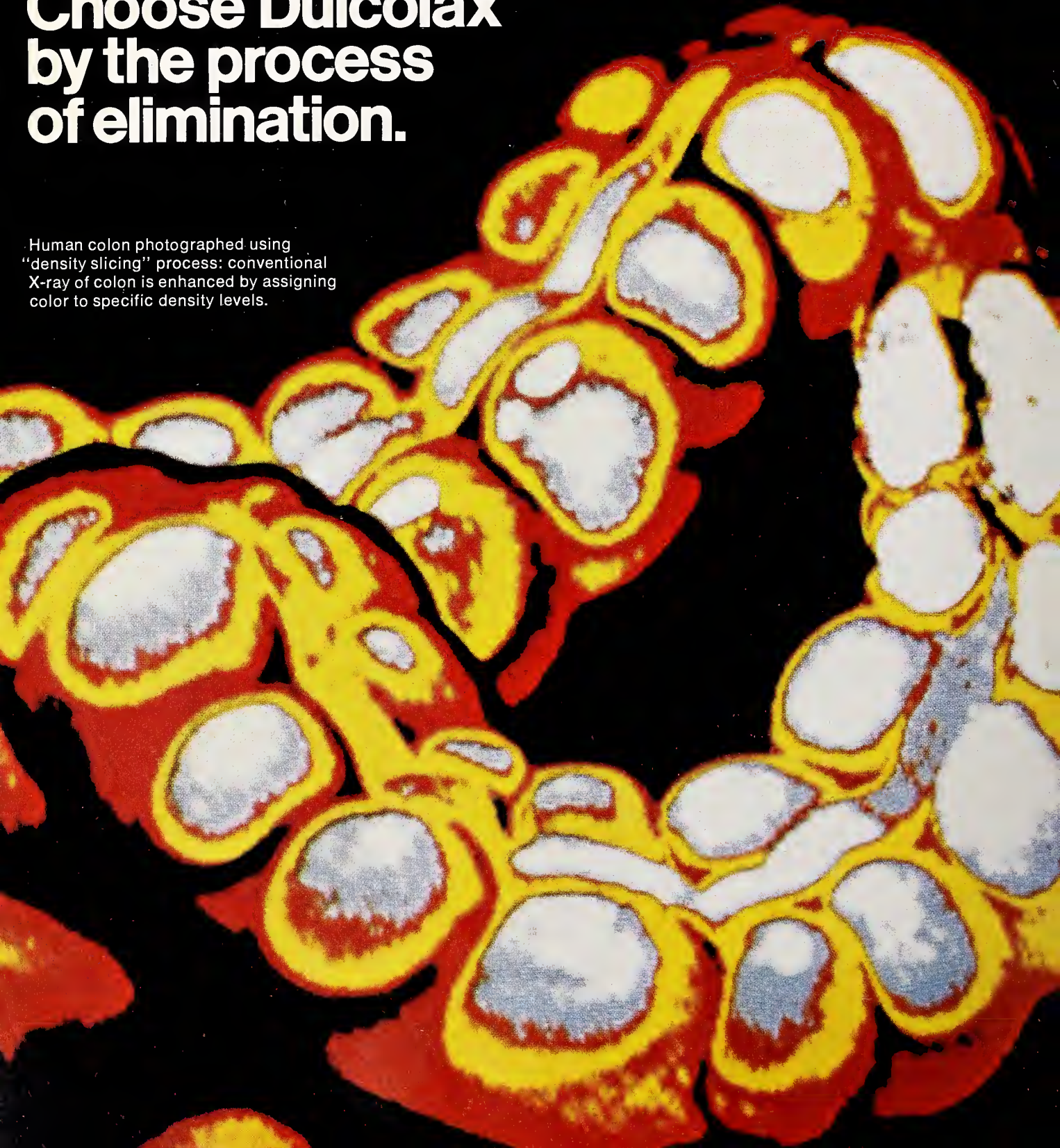
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Treatment of Hyperthyroidism—1976

Bruce F. Bower, M.D.

Abstract—Hyperthyroidism is a common clinical endocrine problem for which several effective forms of therapy are available. Optimal treatment demands individualization of therapy based on specific patient requirements and full knowledge of the advantages and potential complications of drug therapy, surgery and radioactive iodide administration.

In 1976 hyperthyroidism remains a common endocrine problem for which several distinctive therapeutic modalities are available. These treatments include antithyroid medications, radioactive iodine and surgery. The presence of three separate modes of therapy indicates that no single therapy is ideal for all patients and also to a significant extent poses problems for the physician called upon to select therapy for a given hyperthyroid patient. The use of any single mode of therapy for all hyperthyroid patients is unlikely to maximize the individual advantages of these different potential treatments.

In this discussion of the treatment of hyperthyroidism each of the potential treatment programs will be outlined and their relative advantages and disadvantages indicated. In the majority of hyperthyroid patients the etiology of hyperthyroidism is diffuse toxic goiter (Grave's Disease), although both single and multinodular toxic goiter (Plummer's Disease) is also an important etiology, particularly in older patients. Where differences in etiology of hyperthyroidism may result in significant differences in therapy this distinction will be emphasized. The treatments outlined apply to 95% of hyperthyroid patients but exclude special circumstances such as thyroid storm, treatment of hyperthyroidism during pregnancy, and hyperthyroidism complicated by significant ophthalmologic complications of infiltrative ophthalmopathy.

DRUG THERAPY: Drug therapy for primary control of hyperthyroidism is accomplished primarily by the use of thioamide medications. In this country propylthiouracil and methimazole (Tapazole[®]) are the two preparations most commonly employed. Drug therapy also has at times employed iodide, lithium, propranolol and other beta-adrenergic blocking agents as definitive therapy in addition to the more common use of these medications as adjuncts to thioamide treatment. Drug therapy is also used commonly prior to surgery

and occasionally prior to radioactive iodine therapy in order to achieve clinical euthyroidism in anticipation of definitive surgical or radioisotope therapy. The use of drugs alone for definitive therapy, as opposed to initial control of the hyperthyroid state, implies a minimum of one year of treatment which may be extended electively depending on specific circumstances.

The mechanism of action of the thioamide drugs is complex but their principal action is to block organification of iodine, preventing conversion to biologically active thyroid hormone after initial concentration of iodide by the ion transport system of the thyroid gland. In contrast, the beta-blocking sympatholytic agents attenuate the sympathomimetic peripheral effects of circulating thyroid hormone. Iodine blocks both organification and release of thyroid hormone although the action is self-limited and characterized by the phenomenon of "escape" despite continued iodide therapy.

THIOAMIDES:

Method of Treatment: Drug therapy with thioamides implies the use of either propylthiouracil or methimazole (Tapazole). Drug therapy for definitive treatment is initiated in doses of 100 mg. three to four times daily for propylthiouracil or 10 mg. three to four times daily for methimazole. Careful attention to intervals between doses of six to eight hours may be important during initiation of therapy and initial restoration of the euthyroid state. A favorable response to treatment, implying both control during the period of drug administration and evidence of sustained remission following subsequent discontinuation of thioamide therapy, was initially reported in approximately 50% of patients. More recent experience indicates that the percentage of sustained remission is far lower. In 1975, approximately 20 to 30% sustained remission is all that is expected, perhaps as a result of increased levels of environmental and dietary iodide. Iodide treatment has been shown to significantly decrease the response to simultaneous thioamide therapy in a variety of clinical circumstances.

Characteristics predicting control of hyperthyroidism following thioamide drug therapy alone include female patients, relatively small thyroid glands, and evidences of hyperthyroidism of brief duration. Definitive therapy of hyperthyroidism is only practical for Grave's Disease, a disorder of uncertain etiology but characterized by a course including spontaneous remission. In patients with hyperthyroidism secondary to toxic solitary nodular or multinodular thyroid

DR. BRUCE F. BOWER, Clinical Endocrinologist, Hartford Hospital, Associate Clinical Professor of Medicine, University of Connecticut Health Center.

disease, drug therapy may be appropriate for initial control prior to definitive surgery or radioactive iodine therapy but spontaneous remission does not occur either with or without such treatment.

Drug therapy is initiated at the previously stated doses and as the patient achieves euthyroidism the dose is either decreased (Propylthiouracil 50 to 150 mg. daily, methimazole 5 to 15 mg. daily) in amount or frequency or alternatively continued in full suppressive doses with the addition of supplemental exogenous thyroid hormone (desiccated thyroid 60-120 mg. daily, l-thyroxine 0.1 - 0.2 mg. daily) in order to maintain a clinical euthyroid state. Failure to either modify the initial drug therapy or to add exogenous thyroid predictably results in eventual hypothyroidism often associated with striking increase in thyroid gland size as previously suppressed thyroid stimulating hormone (TSH) is stimulated by thioamide blockade of thyroid synthesis.

Advantages: For the patient in whom drug therapy for one year results in remission of the hyperthyroid process and return to euthyroidism, thioamide therapy represents a nearly ideal solution. This is the only form of antithyroid therapy in which the thyroid gland is not partially or completely destroyed. In general all patients with hyperthyroidism should be considered for thioamide therapy for this reason prior to more definitive disruptive antithyroid treatment such as radioactive iodine administration or surgery. If remission from hyperthyroidism is not accomplished or if subsequent relapse occurs following discontinuation of antithyroid therapy, these alternative treatments may be employed at this juncture in the illness.

Complications: Two major complications of antithyroid therapy are widely recognized. The first and probably most frequent is the difficulty in patient compliance with a program that requires medications at six to eight hour intervals for minimum periods of 12 months. Divided doses of antithyroid medications are desirable because of the relatively short half life of the thioamides during initiation of therapy. In some patients initiation of therapy, and in additional patients, subsequent maintenance of therapy may be accomplished with similar doses of medication taken as a single daily dose where difficulties occur with patient compliance.

A second important group of complications are drug sensitivities to the thioamides. The most frequent reaction is dermatologic. Skin rash can occur at any time during antithyroid therapy but is common during the first one to four weeks of treatment. Discontinuation of therapy is usually all that is required should dermatologic intolerance develop. In some patients the use of antihistamines or steroids for short periods of time is of additional symptomatic benefit.

A more serious complication is the leukopenic and granulocytopenic response which occurs in about 5% of patients treated with thioamides. Subjective symptoms of drug-induced granulocytopenia include sore throat and unexplained fever. The abruptness of the fall in white blood cell count makes frequent routine white blood cell counts and differential determinations inadequate to predict these complications. A white blood count and differential blood count should be obtained prior to initiation of antithyroid therapy, however, since leukopenia and relative lymphocytosis are both characteristics of Grave's disease per se and the knowledge of pretreatment leukopenia or lymphocytosis is reassuring when drug-related granulocytopenia is suspected. Routine periodic white blood counts after initiation of thioamide therapy are neither necessary, desirable or practical. Patients should be instructed, however, to promptly discontinue thioamide therapy with onset of sore throat or unexplained fever and white blood counts, and differential counts should then be obtained.

A third complication of thioamide treatment is a connective tissue disorder that clinically resembles, in many respects, lupus erythematosus. Arthralgia and a variety of related connective tissue symptoms are characteristic. In contrast to granulocytopenia this complication may arise at any time during the course of therapy.

It is advisable to discontinue thioamide therapy in the presence of any of the above complications. Where a relatively minor complication such as skin rash has resolved consideration of either reinstitution of the previous antithyroid medication or an alternative, thioamide medication may be given. It is usually preferable to consider alternatives to drug therapy since these are available and the potential consequences of drug sensitivity are both real and hazardous.

Drug therapy in the absence of complication should be continued for approximately one year. At that time thioamide therapy can be electively discontinued and the patient closely followed clinically and by appropriate laboratory parameters for evidence of either sustained remission or recurrence. Alternatively thyroid suppression studies may be employed for predicting that group of patients likely to achieve sustained remission prior to discontinuation of thioamide therapy. In this procedure a radioactive iodine uptake is obtained after the administration of triiodothyronine, 25 mcg. three times daily, for one week. A radioactive iodine uptake below 10% at 24 hours or one suppressed below 50% of a pretreatment radioactive iodine uptake suggests the reinstitution of normal thyroid control mechanisms and a high probability of clinical remission following discontinua-

tion of thioamide therapy. Failure of suppression in turn indicates a likelihood of ongoing hyperthyroidism and may be an indication for extension of therapy for an additional six months to one year. It should be emphasized that thioamide therapy need not be interrupted for this test procedure. In the final analysis, however, discontinuation of antithyroid treatment and documentation of clinical recurrence is the only absolute criteria of drug therapy failure.

Iodide: Iodide treatment has been used in the distant past for definitive therapy of hyperthyroidism resulting from Grave's Disease prior to thioamide availability. Occasional patients with extremely mild hyperthyroidism respond to iodine therapy alone in the form of Lugol's solution (10 drops three times daily) or saturated solution of potassium iodide (2 drops twice daily). The role of iodide for treatment of hyperthyroidism in 1976 is limited to its use as an adjunct to other forms of antithyroid treatment. The chief role of inorganic iodide is in conjunction with thioamide therapy prior to elective thyroidectomy. An unexplained, but extremely useful, aspect of such combined thioamide and iodide therapy is a marked decrease in gland size with an increase in firmness which is technically advantageous at the time of thyroidectomy. In this presurgical context, iodide therapy is added after initial control of the hyperthyroidism by six weeks to three months of thioamide therapy. The two drugs are given together for a period of seven to ten days prior to surgery.

Beta-blockers: An important role has emerged for the use of beta-blocking sympatholytic agents for the control of symptomatic hyperthyroidism. In the past reserpine and guanethidine have been used. In 1976 essentially all such therapy is accomplished with propranolol (Inderal R) 10 to 40 mg. three to four times daily. Although this agent may be used as the sole form of therapy in mild hyperthyroidism it is more commonly used in conjunction with thioamides to control the initial subjective effects of hyperthyroid state prior to the control of excessive thyroid hormone secretion by thioamide medications. It should be emphasized that the beta-blocking agents do not decrease the concentration of circulating thyroid hormone but act only to block certain of the peripheral manifestations of the hyperthyroid process. This useful contrast permits initiation of therapy with beta-blocking agents without obscuring pertinent diagnostic thyroid laboratory parameters. Complications of sympatholytic therapy include excessive bradycardia and occasional postural hypotension. These agents should be used cautiously in patients with history of asthma or previous congestive heart failure.

RADIOACTIVE IODINE (I-131)

Methods of treatment: I-131 therapy has been available for approximately 35 years and has been extensively employed in the treatment of hyperthyroidism. In the view of many experienced thyroidologists this form of therapy represents the most ideal form of treatment. Treatment may be instituted without preliminary drug therapy in most patients and remission of hyperthyroidism is accomplished on a permanent basis between six weeks and four months following treatment in approximately 75% of patients.

Concerns have arisen regarding the widespread use of radioactive iodine as a result of the significant incidence of long term hypothyroidism which occurs years following radioactive iodine therapy. The incidence of delayed hypothyroidism approximates 2% of patients treated per year in addition to 20% to 30% of patients in whom hypothyroidism occurs as an immediate post-therapy complication of treatment. Efforts to modify the dosage of radioactive iodine employed have not been successful in eliminating this complication and have resulted in a significant increase in the number of patients requiring two or more treatments for initial control of hyperthyroidism. Since the complication of late hypothyroidism is also seen in patients treated by both surgical thyroidectomy and in small numbers of patients treated by antithyroid medications alone, many observers feel that late hypothyroidism is a complication of the disease process itself rather than specific therapy.

Advantages: Treatment of hyperthyroidism with radioactive iodine is inexpensive, straight forward and usually accomplished on an out-patient basis. The ease of therapy as well as the high incidence of control of the hyperthyroid process are important contrasts to the previously described one year or greater period of therapy and the 30% to 50% remission rate with thioamide drug treatment alone. The complication of hypothyroidism previously discussed is easily treated when recognized with appropriate thyroid replacement therapy. Unfortunately, in many patients the symptoms of hypothyroidism develop slowly and insidiously, and advanced hypothyroidism may develop without patient recognition and resultant treatment. Unfortunately, hypothyroid patients are notoriously difficult in terms of compliance with medication programs.

Complications: The only significant complication of therapy is that of minimal radiation thyroiditis which occasionally produces tenderness in the thyroid gland. Infrequently the release of significant amounts of stored thyroid hormone may be of consequence in patients with limited cardiac reserve. For this reason

high risk patients are commonly treated initially with thioamide medications to deplete intrathyroidal thyroid stores prior to definitive therapy with radioactive iodine.

Disadvantages: The only significant disadvantage of radioactive iodine is the relatively high incidence of immediate post-treatment hypothyroidism as well as the previously mentioned late hypothyroid consequences. For this reason all patients with hyperthyroidism treated by radioactive iodine or any mode of therapy should be followed on a life-long basis. Careful follow-up studies extending over 30 years have shown no significant incidence of thyroid neoplasia or evidence of other complications potentially attributable to radioactive therapy. Hence, despite initial theoretical concern, nearly complete assurance can be offered regarding these possible complications of treatment.

Continued concern regarding possible genetic effects persists despite the lack of any increased discernible incidence of such complications. In some centers radioactive iodine is not administered during either the pediatric or reproductive age group except in the presence of complications precluding drug therapy or surgery. It should be indicated that the amount of gonadal radiation resulting from radioactive iodine in the treatment of hyperthyroidism is similar to that obtained during a barium enema or intravenous pyelogram x-ray examination. Thus, it can be assumed that the incidence of genetic complications, if any, is sufficiently small to be negligible for any given patient receiving radioactive iodine therapy.

SURGERY:

Subtotal thyroidectomy for control of hyperthyroidism secondary to Grave's Disease or solitary or multinodular goiter producing hyperthyroidism remains widely employed. This procedure has the advantage of highly probable definitive correction of the hyperthyroidism which occurs promptly following successful surgery. A period of preliminary therapy with thioamide medication and subsequent iodide administration (see above) of six to twelve weeks' duration is usually necessary in order to achieve euthyroidism prior to elective subtotal thyroidectomy. In patients who are not optimally controlled by this program the use of the beta-blocking agents has markedly facilitated control of preoperative and intra-operative cardiovascular effects of the hyperthyroid state.

Advantages: In the absence of surgical complications, subtotal thyroidectomy is a highly successful and desirable mode of treatment. An additional advantage relative to drug therapy alone or radioactive iodide is the ability to examine the thyroid gland at the time of surgery. This may be important in the case

of hyperthyroidism with coexistent thyroid nodularity. The incidence of carcinoma of the thyroid gland is increased in all forms of hyperthyroidism, and with surgery removal of suspicious thyroid nodules is accomplished incidental to the subtotal thyroidectomy for control of the hyperthyroid process. Surgical techniques vary but include a variety of procedures necessary to remove approximately 70% to 90% of the thyroid gland leaving a small thyroid remnant to preserve normal levels of thyroid hormone secretion, while at the same time, protecting the parathyroid glands and recurrent laryngeal nerves from inadvertent surgical injury.

Disadvantages: Despite extensive thyroid surgical experience the complications of inadvertent hypoparathyroidism secondary to removal or destruction of the parathyroid glands and recurrent laryngeal nerve damage with hoarseness continues to occur. It is estimated that these complications occur between 5% and 10% of hyperthyroid patients surgically treated and are particularly likely to occur where recurrent thyroid surgery for hyperthyroidism is attempted. For this reason recurrent thyroid surgery is not encouraged and radioactive iodine treatment is suggested for patients in whom the initial surgical procedure fails to achieve euthyroidism.

The incidence of immediate hypothyroidism following surgery would appear to approximate that following radioactive iodine therapy although significantly fewer patients have residual hyperthyroidism than those treated with radioactive iodine. As previously stated (see above) the recognition of hypothyroidism and institution of treatment are theoretically entirely straight forward. Compliance with life long replacement thyroid therapy remains the principal practical disadvantage.

Hypoparathyroidism may be transient in as high as 15% and permanent in approximately 5% of hyperthyroid patients treated by subtotal thyroidectomy. Treatment of the hypoparathyroidism is accomplished by the use of Vitamin D in doses of 50,000 to 100,000 units daily with or without the use of supplemental oral calcium supplements. Immediate post-surgical hypocalcemia is controlled with intravenous calcium therapy during the period necessary for a decision regarding the need for long term therapy. Newer forms of Vitamin D such as dihydrotachysterol have simplified considerably the therapy of this complication with its attendant hazard of overtreatment and iatrogenic hypercalcemia.

Intraoperative surgical and anesthetic complications are, and should be, minimal in the adequately prepared patient. Mortality from thyroid surgery in

medically well-controlled patients approximates the anesthetic mortality alone.

In summary, multiple modes of therapy for hyperthyroidism are available in 1976. The best results are accomplished when the individual characteristics of the patient's disorder and the individual advantages and disadvantages of the several alternative forms of therapy are considered. It is usually clear in any given patient that one form of therapy presents specific advantages in the individual situation. No single form of therapy for hyperthyroidism is sufficiently ideal to be

applied indiscriminately and noncritically to all hyperthyroid patients.

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Venous Hypertension as a Complication of Arteriovenous Fistula for Hemodialysis

Morris D. Kerstein, M.D. and Carl J. May, M.D.

Introduction

The arteriovenous fistula is the currently accepted method for long term hemodialysis.¹ A heretofore uncommonly discussed complication of venous hypertension is presented.²

Case History

This 63-year-old white male with a diagnosis of glomerulonephritis since 1943 was two years status post AV fistula of the right arm for home-dialysis. He presented with a six month history of a swollen, tender right index finger, worse in the last three weeks. Physical examination confirmed a patent fistula. The index finger was swollen, tender; the skin seemed thickened; there was a brownish discoloration and an area of ulceration (Figure 1 and Figure 2). Pertinent laboratory studies included a BUN 48, Creat. 12.2, albumin 3.2; there was a mild anemia; LFTs were normal. Under local anesthesia the veins on the dorsum of the hand were ligated. The problems resolved after a period of time. The fistula was saved and remains in use.

Discussion

Chronic venous insufficiency usually brings to mind the lower extremity. However, venous hypertension on the basis of a permanent arteriovenous fistula can develop in the hand, because of retrograde arterial flow and pressure. High pressure in the hand or fingers may cause significant swelling with associated patient discomfort. Not unlike the progression of disease in the lower extremities. The venous hypertension results in dilation of veins with subsequent ache secondary to stretching of the skin and sympathetic irritation. Shortly thereafter, plasma proteins accumulate in the



Figure 1

Swollen index finger secondary to venous hypertension and a related arteriovenous fistula.



Figure 2

Magnified view of index finger.

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soft tissue followed by diapedesis of red blood cells. The breakdown of red cells with hemosiderin deposition, as well as melanin stimulation from chronic irritation, give the brownish appearance. The thick leathery skin will follow lymphatic obstruction and invasion and irritation by inflammatory cells; and, finally minor trauma will result in skin breakdown and a non-or poorly healing ulcer.

Management is either by elevation, compression, ligation of the veins locally or closure of the fistula.

Summary

Venous hypertension with chronic venous insufficiency and its sequelae in the hand is reported as a complication of an arteriovenous fistula for hemodialysis.

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Acute Torsion of the Gallbladder

Huey C. Lin, M.D., and John F. Piro, M.D.

Acute torsion of the gallbladder is an unusual surgical emergency. Less than 300 cases have been described since the first report by Wendel in 1898. The signs and symptoms usually suggest acute cholecystitis and the correct diagnosis is recognized only at laparotomy.

Case Report

Mrs. E.U., age 80, unit #135713 was admitted to the Norwalk Hospital as an emergency on January 28th, 1975, with a 14 hour history of acute onset of right hypochondrium pain associated with repeated vomiting. The vomitus had become bile-stained. The pain was spasmodic colicky in nature and had not radiated to the back or shoulder. She had a similar attack two years earlier and at that time gallbladder series was normal. Since then she had suffered from right hypochondrium pain periodically.

On examination she was thin and had a dorsal kyphosis. The abdomen was slightly distended. There was marked tenderness and a palpable mass the size of a baby's fist in the right upper quadrant. Bowel sounds were infrequent but of normal character. Murphy's sign was positive. There was no jaundice. Temperature 98.6°F, pulse rate 80, BP 190/90 mmHg., WBC was 15,400 with some left shift. Serum bilirubin was 0.7 mg/dl and alkaline phosphatase 81 I.U. (Normal up to 120 I.U.)

Intravenous cholangiogram showed a peculiar pear-shaped soft tissue density lateral and inferior to the opacified common bile duct (Fig. 1.). The possibility of acute cholecystitis with cystic duct obstruction was considered.

She was therefore explored through a right subcostal incision. The gallbladder was found to be black and pear-shaped (Figure 2.). It hung from the liver by a pedicle which included a mesentery, the cystic artery and vein and the cystic duct. The gallbladder and its pedicle had twisted two completed turns in a counterclockwise direction (Figure 3), so that there was complete infarction of the gallbladder. The gallbladder and cystic duct were removed without difficulty and the common duct was normal in appearance. The postoperative course was uneventful and she was discharged well on the seventh postoperative day.

Gallbladder culture (aerobic and anaerobic) was negative for bacteria and there were no calculi. The wall was infarcted (Figure 4). Branches of the cystic vein were thrombosed and the cystic artery wall was thick and edematous. The cystic duct was well preserved.



Figure 1
Intravenous cholangiogram.



Figure 2
Black and pear-shaped gallbladder.

DR. HUEY C. LIN, Resident in Surgery and DR. JOHN F. PIRO, Senior Attending Surgeon; both of Norwalk Hospital.

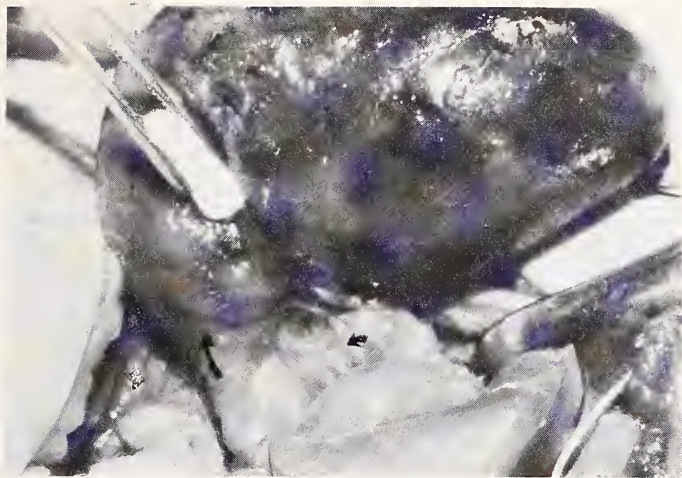


Figure 3

Gallbladder and its pedicle mesentery twisted pedicle.

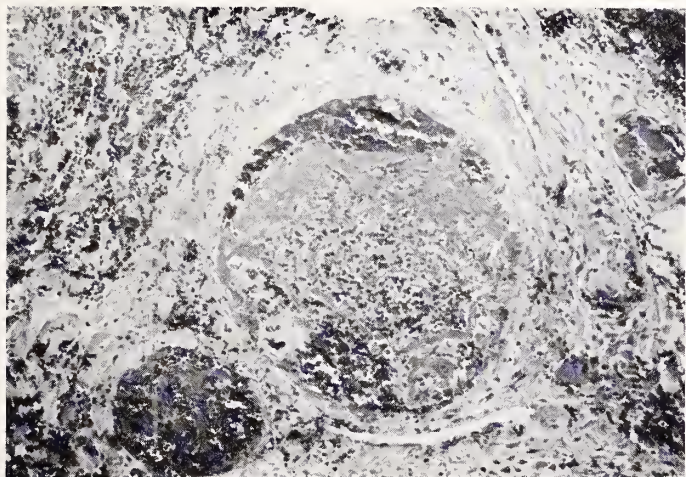


Figure 4

Microscopic view of thrombotic vein of the gangrenous gallbladder wall.

Discussion

It seems likely that the previous symptoms were due to attacks of partial torsion without gangrene, a

phenomenon—previously described by Ashby.² The preoperative diagnosis is always difficult. Common findings are previous good health, a mobile tender right upper quadrant mass, old age, a thin habitus and kyphosis.³ Obviously the syndrome can only occur in a long-pediced gallbladder which can swing freely. The immediate cause of the torsion is unknown although it may be related to the normal peristaltic action in the transverse colon. This should produce a counterclockwise rotation which is indeed the usual finding as in our case. The preoperative diagnosis can be suspected if the clinical picture is typical but an absolute differentiation from acute cholecystitis is not possible. In any event, cholecystectomy should be carried out promptly.

Summary

A typical case of acute torsion of the gallbladder is described. Characteristic features which could have led to the proper preoperative diagnosis were old age (80 years), thin habitus, kyphosis, recurrent attacks despite a normal gallbladder series two years earlier, and a mobile tender right upper quadrant mass. Prompt cholecystectomy revealed a gangrenous gallbladder twisted on a long pedicle and led to cure.

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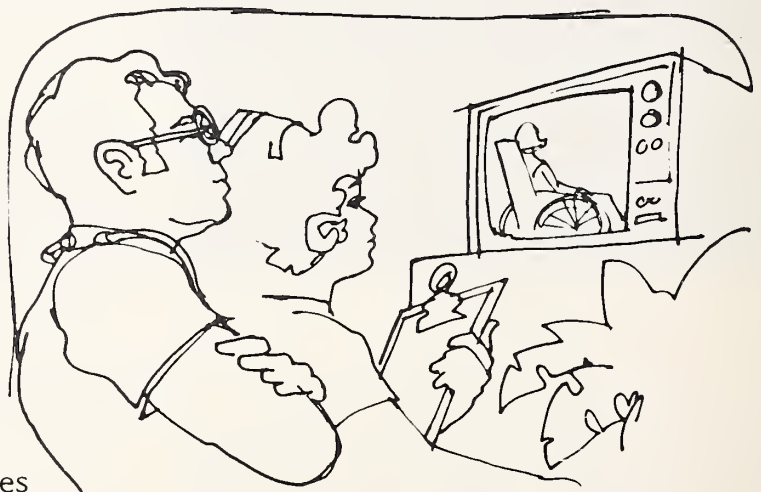
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Electrocardiographic Diagnosis of a Metastatic Heart Tumor

Michael H. Swirsky, M.D., Oscar Roth, M.D. and Luca Celentano, M.D.

Abstract—Cardiac metastases are not uncommon but are often missed during lifetime. Electrocardiographic changes, while completely nonspecific and often absent, may at times, if present, direct suspicion to cardiac involvement. In the proper clinical setting these findings may occasionally even permit prediction of the tumor's location in the heart. The early recognition of cardiac metastases may lead to palliative treatment or may render unnecessary further, often invasive, investigations and/or treatment. A case of such a patient is presented.

Metastatic cancer of the heart was described as early as 1700.¹ It is often associated with wide spread systemic tumor involvement. The incidence of metastatic cardiac tumors in various reports ranges from 1.5 to 20.6 percent of patients dying of malignant disease.² The mode of tumor spread can be by either hematogenous route, lymphatic channels or by direct extension.³ The most common tumors involving the heart include malignant melanoma, carcinoma of the breast and carcinoma of the lung.^{1,3,9} The tumor can involve only the pericardium often causing a pericardial effusion.^{1,3} It can also involve the conduction system impairing the normal cardiac rhythm, replace part of the myocardium, or even obstruct some of the coronary arteries.^{1,3} The antemortem diagnosis of metastatic heart disease is quite difficult because many of the symptoms and objective findings mimic other disease states.⁴ Cardiac symptoms may be minimal despite extensive involvement. Cardiac metastasis should be suspected in patients with a known malignancy who exhibit cardiac arrhythmias, heart failure, pericarditis or a left-sided pleural effusion.^{2,4} The ECG changes in this situation, while nonspecific, may be quite helpful in diagnosing cardiac involvement and these findings will depend on both the location and size of the heart tumor.^{1,2,3,4} The most

common rhythm disturbances are atrial fibrillation, atrial flutter, paroxysmal supraventricular tachycardia, premature beats, atrio-ventricular block or bundle branch block.^{1,2,4} Rarely signs implying atrial infarction can be seen with abnormal P waves, deviated P-Ta segments and atrial arrhythmias.⁵ Occasionally one may find ECG changes suggesting an acute ventricular myocardial infarction with both Q waves, persistent S-T segment elevation and reciprocal S-T depression as reported by Lloyd⁶ in 1929, Siegel and Young in 1933,⁷ Rosenbaum in 1944⁸ and Harris et al in 1965.⁴ It should be stated that although the ECG findings suggest myocardial infarction, no cardiac enzyme changes are noted.⁴ A case of secondary heart tumor due to direct extension of a bronchogenic carcinoma is reported. The cardiac tumor was diagnosed during lifetime with prediction of its correct location based on the ECG changes. In view of the patient's downhill course and the electrocardiograms, further investigations were omitted and palliative treatment was withheld.

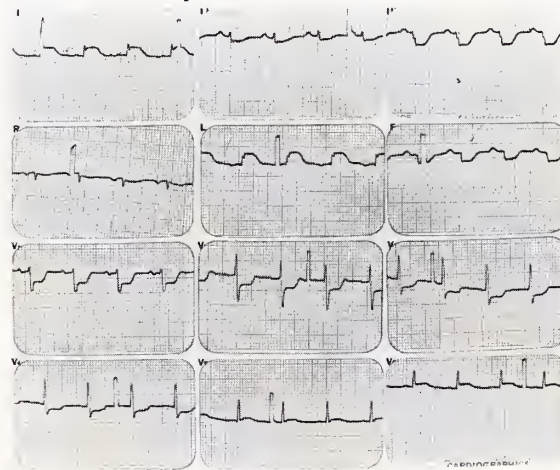


Figure 1

This is the ECG completely like the six other ECGs during the next two weeks. It initially strongly suggested an acute high lateral wall injury. The absence of changes of an acute injury pattern with normal enzymes is consistent with a ventricular aneurysm but in this patient's clinical setting, it pointed towards a metastatic tumor in the high lateral wall of the heart. Note the low QRS complexes in the limb leads, small q waves and elevated ST segments in lead I, aVL and V6 and the depressed ST segments in the other leads.

Case Report

Mr. J. D. was a 67-year old white male whose past medical history was negative except for an active duodenal ulcer proven by X-ray. One month prior to admission to the hospital he noted slight shortness of breath. Physical examinations revealed bilateral rales and ankle edema. Chest X-ray was consistent with congestive failure and showed a large left pleural effusion with generalized

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cardiac enlargement. The patient was digitalized and placed on a diuretic. He did not show significant improvement, on the contrary during the next few days he began to have signs of increasing mental deterioration, incoordination and dysarthria necessitating admission to the Hospital of St. Raphael for further evaluation.

A review of systems revealed anorexia and weight loss of 15 to 20 pounds prior to his hospitalization. He was a nonsmoker. The patient denied recurrent headaches, dizziness, tinnitus, blurred vision, diplopia or seizures.

On physical examination he appeared confused but in no acute distress. Eye examination revealed the pupils to be round, regular and equal with prompt reaction to light and accommodation. The extra-ocular muscle movements were intact. Papilledema was absent. Examination of the chest showed an increased anterior to posterior diameter. The lower-left lung was dull to percussion and revealed decreased breath sounds on auscultation. The findings in the right lung were normal. Cardiac examination revealed a regular rhythm, a Grade III/VI systolic ejection murmur, and no pericardial rub. The abdominal examination was negative. One plus ankle edema was present. Initial neurological findings were a mild left facial paralysis, diminished left-sided muscle tone and a questionable left Babinski reflex. Rectal examination was unremarkable. The patient had no palpable nodes. The working diagnosis was probable carcinoma of the lung with metastatic brain involvement.



Figure 2

A cancer of the left lung extended into the left heart and involved predominately the upper-lateral left ventricular wall for at least half the depth of the myocardium.

Significant laboratory studies included: sodium 133 mEq/l, chloride 98 mEq/l, glucose 106 mg/100 ml., blood urea nitrogen 31 mg/100 ml., direct bilirubin 0.5 mg/100 ml., indirect bilirubin 0.6 mg/100 ml., serum glutamic oxaloacetic transaminase (SGOT) 10 units/ml., serum lactic dehydrogenase (LDH) 270 units/ml., calcium 8.7 mg/100 ml., phosphorus 4.4 mg/100 ml., serum iron 45 micrograms/100 ml., alkaline phosphatase 64 international units, hemoglobin 10.5 grams, hematocrit 35 percent and white blood cells 9.9 thousand. Chest X-ray was unchanged with definite left pleural effusion and generalized cardiac enlargement. A possible infiltrate was noted of the left base. The right lung field was clear. An initial ECG revealed a ventricular rate of 100, normal axis, regular sinus rhythm, normal P waves, low QRS complexes in the limb leads, small Q waves and elevated S-T segments in leads I, AVL, and V6 while the S-T segments in the other leads were depressed. The ECG was suggestive of a high lateral wall injury. Six other ECGs during the next two weeks were completely unchanged with persistent S-T abnormalities. Five sets of enzyme studies showed the SGOT, SGPT and LDH values to be well within normal limits.



Figure 3

Left lung with carcinoma extending directly into the left-upper lateral ventricular wall of the heart.

On the basis of these laboratory results and the absence of cardiac findings the probable diagnosis of metastatic tumor of the left high lateral wall of the heart was made at the time of the third ECG. A neurosurgical evaluation suggested a lesion in the right frontal area at or just anterior to the Sylvian fissure. An ECG revealed a structural lesion in the left hemisphere while a brain scan exhibited bilateral involvement. Skull films showed a calcified pineal gland in normal anatomic position. A thoracentesis was performed and the fluid showed no malignant cells but was consistent with an inflammatory exudate. The patient continued to deteriorate and became comatose on the thirteenth day of hospitalization until his death on the twenty-third hospital day. In view of the generally poor condition of the patient and the ECG findings, no further investigations were made and no palliative treatment such as radiation or chemotherapy was attempted.

The autopsy revealed carcinoma of the left lung with direct extension to the heart. There was metastatic involvement of the right lung, brain, adrenals, kidneys, pancreas and intestines. The heart weighed 675 grams with a tumor mass in the pericardium measuring 2½ centimeters in diameter on the external anterior surface. The visceral and parietal layers of the pericardium were adherent causing obliteration of the cavity. A dense, firm, gray-white tumor mass was noted in the left-lower lobe of the lung which had infiltrated the pericardium and extended into the left heart involving predominantly the upper-lateral ventricular wall. The right ventricle and both atria were mostly free of tumor. When the heart was opened, the tumor tissue was found to extend into the left ventricular muscle to at least half the depth of the myocardium. The interventricular septum was not involved. All the heart valves were soft and pliable. The atrial cavities were free of thrombi. The right coronary artery showed scattered areas of atheromatous plaque formation but was patent. The descending and circumflex branches of the left coronary artery were surrounded by the invading tumor tissue and no infiltration of the vessels or obstruction of the major branches were identified.

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Imported Scrub Typhus

Peter H. Maher, M.D.

Scrub or mite-borne typhus is an acute febrile illness caused by *Rickettsia Tsutsugamushi* or *R. Orientalis*. It rose from obscurity to prominence during World War II when some 18,000 allied troops were infected in the South Pacific and Southeast Asia. The Japanese forces in the same regions incurred more than 30,000 cases. Death rates for American troops ranged from 0.5% to 35% in different epidemics with higher rates for those over age 35 and for patients with coexistent diseases.¹

Until the end of the Vietnam War in 1973, few if any reports dealing with the clinical features and treatment of scrub typhus had appeared in the American Medical literature for over 20 years. Two reports were published in July 1973 dealing with the military experience with scrub typhus in Vietnam.¹⁻²

The case reported below, the first ever recorded by the state of Connecticut Health Department, is presented to alert physicians to this rare disease in this part of the world in a civilian business man. Greater world travel and exploration of foreign rural areas may well result in more such cases in the future.

Case Report

A 38-year-old advertising executive and amateur photographer was vaccinated for smallpox in Honolulu on 11/6/73 while enroute to Japan; he noted no local or systemic reaction from the vaccination. On 11/12/73 he visited the Mount Fujiyama area and photographed the area on foot in the bush. On 11/15/73 an ulceration appeared above the medial malleolus of his left ankle. Upon returning home to the U.S. he noted on 11/21/73 the onset of fever, chills and headache and by the next day he had a trunkal rash and conjunctivitis. On 11/23 he was seen as an outpatient and a tentative diagnosis of *Vaccinia* was made; the rash appeared macular and vesicular and the lesion on the ankle appeared to be a secondary vaccination site with a thick black "scab" surrounded by erythema; however, in retrospect the original vaccination site was healing well. A dermatology consult on 11/23 prescribed parenteral steroids and this was repeated on 11/26. His condition however, worsened and hospitalization was advised on 11/27/73.

On the admission he was delirious with a rectal temperature of 104°; respiration 24; blood pressure 110/60; pulse 100/min. regu-

lar. Non-purulent conjunctivitis was present bilaterally; slight nuchal rigidity was noted. The spleen was palpable 2 cm. below left costal margin. A macular-vesicular rash was evident on trunk, arms, and legs with a prominent 2 cm. eschar lesion on the inner aspect of the left lower leg; no lymph nodes were palpable. No localizing neurological signs were present; no palmar lesions were seen. Again generalized *Vaccinia* was diagnosed and the Communicable Disease Center in Atlanta was contacted; on the evening of admission the patient was begun on *vaccinia* immune globulin.

Admission lab studies showed a WBC of 4,500 with 66% segs, 16 non segs, 10 lymphs, 8 monocytes; Hct of 37% and sed. rate of 30 mm/hr. Winthrobe method; urinalysis, VDRL, and electrolytes were normal. SMA-12/60 showed moderately elevated S.G.O.T. and S.L.D.H. enzymes only. EKG was normal. Blood cultures were negative. Agglutination studies done against *Proteus* OX-19 and OXK antigen were negative.

From 11/27 to 11/29, the patient remained febrile, toxic and headaches worsened despite the immune globulin; on 11/29 rales were heard in the right lower chest posteriorly. The rash and eschar remained prominent. On 11/29 Dr. John Larkin, the family pediatrician, heard of the case and having been on military duty in Japan made the clinical diagnosis of Scrub Typhus. Tetracycline in an orally divided dose of 3 gm/24 hrs. was begun on that day. A chest film confirmed the presence of a right lower lobe pneumonia. Fever persisted until 12/1/73 but the headaches and chills subsided within 18 hours after the start of tetracycline therapy. The rash was almost gone by the 7th day of treatment but the eschar remained and was healing well upon discharge on the 14th hospital day. Tetracycline was given orally for a total of 10 days, 3 gm/day for 5 days, followed by 2 gm/day for five days. The patient made a complete recovery and there have been no late complications to date some eight months later.

Results of Fluorescent Antibody Tests on acute and convalescent serum specimens as reported later by the CDC were as follows: Refer to Table I.

Table I

<i>**Fluorescent Antibody Tests</i>	<i>Acute Specimen</i>	<i>Convalescent Specimen</i>
*Karp (Scrub Typhus)	1:640	1:10,240
*Gilliam (Scrub Typhus)	1:160	1:2,560
*Kato (Scrub Typhus)	1:640	1:2,560
Rocky Mt. Spotted Fever	1:10	1:10
Q Fever	1:10	1:10

*Type Specific Antigen

**Immunofluorescence assays were kindly performed by the Center for Disease Control, Atlanta, Georgia.

DR. PETER H. MAHER, Associate Attending Physician, Department of Medicine, The Greenwich Hospital, Greenwich, CT.

Discussion

Rickettsia Tsutsugamushi, transmitted by *Trombiculidae* mites, is widely distributed throughout eastern Asia and the larger islands of the Southeast Pacific. Endemic foci have been found from northern Australia to southeastern Siberia and as far west as the Kirgiz Republic of the USSR and in valleys as high as 10,000 feet in the Himalaya Mountains. It is primarily a sylvan disease where ecological "mite islands" as small as 1 square meter may serve as reservoirs and intense foci of transmission.² The base of Mount Fujiyama is an endemic focus area.

The word "scrub" is descriptive of the type of low dry vegetation in which the mite resides.

Untreated, the disease can be severe and often fatal with death resulting from either pneumonia, encephalitis, vascular collapse, heart failure or hemorrhage, usually in the second or third week. The basic pathological lesion is a vasculitis seen in the skin vessels and organs that are sites of fatal complications.¹⁻²

History of travel to an endemic area, in the presence of fever, rash and the primary "eschar lesion" of naturally acquired scrub typhus should point to the right diagnosis. The major failing of the Weil-Felix

test has been the large number of false-negative results; as high as 50% in some series. The indirect fluorescent antibody test is now the serologic test of choice.²

The recent military studies in Vietnam suggest that a ten day course of tetracycline 2-3 gm/day is completely curative and superior to chloramphenicol. Too short a course of treatment (i.e. 3-4 days) early in the disease (before the 10-14th day) tends to cause a relapse since insufficient antibody has yet developed. Another course of therapy is then required.³ Passive immunization for scrub typhus is ineffective.

I am indebted to Edith M. Beck, M.D. for her critical evaluation of the manuscript.

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Compliance with Antihypertensive Therapy: The Last Link in the Chain

Frank Davidoff, M.D.

The scene is distressingly familiar: a middle-aged man is admitted to the medical service with a devastating stroke due to a left middle cerebral artery thrombosis, cut down in the prime of life. In reviewing this patient's office records, his physician recalls that hypertension had been discovered several years previously. Despite an excellent response to medical therapy initially, the patient had proven by his own admission to be "unreliable" in taking his medications and his hypertension had gone virtually untreated for a good many years, undoubtedly contributing heavily to the early onset and severity of the stroke. Thus, the tragedy is a double one: it is devastating; and it is preventable.¹

Or is it? After all, antihypertensive therapy only works if the patient takes his medicine. Compliance is the current bit of jargon which would now be used to describe patients' adherence to a prescribed course of therapy, and it is now becoming clear that non-compliance is a widely prevalent phenomenon which

is preventing the realization of potential benefits of many therapies. For many years, non-compliance has been viewed by health workers as a kind of vague annoyance, hardly an area of medicine worthy of careful study or serious concern. It is interesting to speculate why compliance has held such a low priority in medicine and why, suddenly, it has now become a topic of such interest. Perhaps it is related to the view that until the 1920's, "the history of medicine was the history of the placebo effect." To the extent that this was true, it didn't really matter if patients complied with a specific therapy (indeed, prior to the 20th century there were many literary references to the advisability of staying out of the clutches of the physician, with his cupping and his purges). The development of modern pharmacology as a part of the "interventionist revolution"² has changed this ancient aspect of the impact of the physician on his patient's life and the natural history of his diseases. Unfortunately, the magnificent chain of discovery, research and development in hypertension therapy beginning with invention of the sphygmomanometer by Riva-Rocci in 1896, including the advances in pathophysiological

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and pharmacological understanding described in previous articles of this series^{3, 4, 5}, and ending with the hypertensive patient in the office today, frequently snaps because of the weakness of this last link in the chain: compliance.

This article examines some aspects of compliance and non-compliance as scientific problems, problems with fascinating theoretical bases and with even more important practical implications. An important paper in the literature on compliance is the now "classic" paper on penicillin therapy in pediatric practice by Charney et al. in 1967.⁶ In this study, the authors demonstrated conclusively that despite the physician's knowledge of the elegant simplicity of oral penicillin therapy for streptococcal pharyngitis, its tremendous effectiveness in eliminating the organism and its importance in preventing rheumatic fever, this knowledge somehow failed to get translated into patient behavior: parents frequently failed to follow the prescribed course of therapy. The failures were more than trivial: 44% of patients failed to receive the course of penicillin therapy as prescribed, and 19% of patients probably failed to receive more than half of the 10-day course.

In the area of hypertension, the non-compliance experience has been quite impressive: where it has been measured quantitatively, compliance with anti-hypertensive therapy has been found in a few studies to be as high as 97%, but much more often in the range of 50%, and as low as 25%.^{7, 8, 9} Certainly these are striking findings, and perhaps will come as a surprise to many physicians. A problem of this magnitude which is obviously interfering with the successful therapy of a treatable disease cannot any longer be considered only a vague annoyance. It may be worthwhile, therefore, to review some of the hypotheses, as well as actual studies designed to get at the root causes of non-compliance. The hypotheses are many;¹⁰ they range from the obvious to the very subtle; and they are certainly not mutually exclusive. Indeed, there is great likelihood that non-compliance, like coronary atherosclerosis, is a multi-factorial problem. Some of the hypotheses include:

1. Lack of formal education of the patient;
2. Unawareness or denial of illness, or its seriousness, by the patient;
3. Lack of long-standing or close relationship between physician and patient;
4. Unpleasantness, complexity or inconvenience of treatment;
5. Repetitiveness and dullness of chronic therapy;
6. Inability of patients to assume an active role, coupled with inability of physicians to share responsibility for decision making;

7. Failure of physicians to understand the disease and therapy, or failure to communicate these adequately to the patient;

8. Failure of the patient to have his expectations met from the encounter with the physician;

and other hypotheses may be conceived without much difficulty. A number of these hypotheses have been tested, and the results, while not very encouraging, have been intriguing. In the first place, the patient's education *per se* seems to have little influence on compliance, nor do age, race, sex, or any other demographic variable.¹⁰ The severity of illness or, more importantly, perception of severity by the patient may have a slight but not consistent effect of increasing compliance. It does seem clear, however, that increasing duration of therapy, particularly in the chronic situation, diminishes compliance progressively. Increasing complexity of regimen has the same effect. More specifically, medication doses are omitted more frequently when four doses per day are prescribed than when less than four are prescribed.

The studies of Dr. B. Korsch and her group may be worth discussing in some detail because of their careful design and execution.¹¹ Using taped pediatrician-parent interviews and a detailed analysis of the interaction, followed by a post-visit interview, she was able to make correlations between elements of the interaction, or the mother's perception of the visit, as independent variables and compliance as a dependent variable. The results were interesting: one of the major variables which influenced compliance was the degree to which the contact with the pediatrician met the mother's expectations, e.g. non-compliance increased from 11% to 24% when a hoped-for explanation of causation had not been offered by the doctor. But the situation was more complex: satisfaction with the doctor's "expressive" behavior (expression of friendliness and understanding of the mother's concern) was also of importance, and compliance fell from a high of 53% among highly satisfied patients to a low of 17% among the highly dissatisfied.

Several recent studies have been addressed to the question of communication between physicians and adult patients in the care of hypertension, with somewhat more varied results. In an important study from Canada, Sackett and his colleagues reported on several interventions carried out to test whether compliance with antihypertensive drug regimens could be improved.⁷ The design of the study initially divided 230 hypertensive steelworkers into two equal groups: one was followed by their own family doctors outside working hours, while in an effort to increase convenience, the other group was seen by industrial physicians during work shifts. The men in one-half of each group were then randomly allotted to an educational

program designed to instruct them intensively about hypertension and its treatment, thus creating a total of four different experimental groups: own physician—no instruction; plant physician—no instruction, etc. Despite good mastery of the material in the educational program by most patients, neither that intervention, nor the increased convenience of access to a plant physician, nor the combination of the two, increased the compliance rate as indicated in the accompanying table:

EFFECTS OF INTERVENTIONS ON % OF TOTAL PATIENTS
IN EACH GROUP COMPLYING AT 6 MONTHS

	<i>Augmented convenience</i>	<i>Normal convenience</i>	<i>Totals</i>
Educational program	48%	53%	50%
No educational program	62%	48%	56%
Totals	54%	51%	53%

Note that compliance was only about 50% in any group, which is similar to that in other studies. Compliance was here defined as pills actually consumed at a level of 80% or more of those expected, a rather loose but not impractical definition. Although this study is limited in scope, and is therefore subject to some criticism, these data certainly emphasize the conclusion reached by a number of other authors that “the acquisition of health knowledge is insufficient, by itself, to alter behaviors.”⁷

Dr. Thomas Inui at the Johns Hopkins Hospital has taken a somewhat different intervention, i.e. the physician, as the focus of his work on this problem.¹² He showed that non-compliance with antihypertensive medication programs, as estimated from the percentage of patients with uncontrolled blood pressures, decreased from 29% to 15% of the total group, a highly significant drop, within two months after the involved physicians attended educational programs which concentrated on the behavioral aspects of the management of patients; the group of patients whose physicians received a “placebo” program showed no such decrease.

Dr. John Williamson has reported on a somewhat similar experience with a Health Accounting system to provide feedback on possible specific problem areas in compliance.¹² In this system, specially trained health accountants, who were non-physicians, administered two questionnaires: one to physicians, one to patients, concerning their knowledge of hypertension as appropriate for their role. The most striking finding which emerged among physicians was that while their textbook knowledge of hypertension pharmaceuticals was perfectly adequate in all, 10 out of 14 were not aware of the poor compliance or poor blood pressure control in their own patients, and 11 out of 14

failed to mention the education of patients when listing the necessary interventions for ideal hypertension management. Among 148 patients, 23 were not aware they had hypertension, 14 were not aware that hypertension is a serious health risk, 30 were unaware of the form or dosage of drug they were receiving to control hypertension, and 120 were unaware of the possible toxic effects of that drug; finally, 137 erroneously related the danger of hypertension to symptoms, such as headache, not realizing that their first symptom might be a preventable stroke, if not death. Based on these results, the health accountants then provided the physicians and patients with intensive individual re-education programs tailored to their deficient areas as identified in the questionnaires. The percentage of the 148 patient responders to the questionnaire whose blood pressure was uncontrolled fell from 34 before, to 13% after the education program, again a highly significant drop. In contrast, among 100 patients who did not respond to the initial questionnaire and whose only further education was therefore by their physician, the rate of uncontrolled blood pressure decreased only from 39 to 29% over the same one year period; a significantly smaller improvement than in the group exposed to Health Accountants.

Although these last two studies also leave many questions unanswered, they are somewhat more optimistic about the effectiveness of educational interventions than the Canadian study. One interesting point which also emerges from Williamson’s work is the suggestion that non-professional health workers, in this case health associates who are carefully selected high school graduates with perhaps two years of college, are at least as effective as physicians in improving compliance, and perhaps more so. The recent finding that a nurse and para-professional-run hypertension therapy program for employees in a large New York department store achieved a 97% rate of maintained therapy and an 81% rate of satisfactory blood pressure reduction after one year¹³ tends to support the value of expanded roles for paraprofessionals in the overall therapeutic task. In Finnerty’s work with an inner city population of hypertensive patients, after pinpointing long waiting times for care as a key element in non-compliance, the nurse has also emerged as an extraordinarily important person in maintaining patient contact with the care system and sustaining treatment.^{14, 15}

In summary, although Sackett’s careful study, taken by itself, seems to indicate that non-compliance with hypertension therapy is a relatively intractable problem, the work of others suggests that when the causes for non-compliance in a particular patient, or group of patients, are explored in detail and interventions are tailor-made to eliminate those causes, com-

pliance can be dramatically increased. Thus, what has in the past appeared to be intransigence on the part of the patient may really have arisen from the inadequacy of our previous analytical tools, and from the inappropriateness of our intervention strategies, including excessive reliance on the physician as the sole provider of care.

As all clinicians and patients know, one therapeutic task with a reputation for minimal compliance and maximum intractability is diet therapy in diabetes.¹⁶ Any technique which increases compliance in this area must, therefore, be not only cause for considerable excitement but also must be examined carefully for the key elements which bring it about. Such an advance appears to have been achieved by Dr. John Davidson, Director of the Diabetes Unit at Emory University.¹⁷ Because of concern about the possible toxicity of the oral hypoglycemic agents, Dr. Davidson and his colleagues decided several years ago to discontinue these drugs on all patients attending the Diabetes Clinics at Grady Hospital. However, these physicians felt it would be inappropriate to remove one therapy of questionable nature without substituting another of more established benefit. Since diet therapy has been established for many years as both safe and effective, although devilishly difficult to implement, a tremendously intensified diet education and counselling program was substituted and extended to all patients in the clinic. The central element of this program was the design and use of a diabetic diet instruction manual, the *Diabetes Guidebook: Diet Section*. This ingenious booklet presents most of the diet information in pictures, and includes sections with small peel-off representations of food portions which can be stuck onto the meal planning charts. Every patient at the clinic is given a copy of the book and brings it to clinic on every visit. The book has been particularly valuable in communicating diet therapy to illiterate patients, although highly educated patients have found that it facilitates learning as well. Each patient is then involved in an average annual total of 25 hours of individual and group instruction and followup on the importance of optimal diet therapy and weight reduction by physician, nurse and dietitian. The results of this program have been extraordinarily impressive: 1500 patients previously on sulfonylureas were taken off the drug; analysis of a representative sample of these patients 14 to 18 months after stopping drug therapy revealed that 60% were being successfully treated with caloric restriction and weight loss alone, while 40% had been started on insulin therapy; 59.5% had lost weight, an average of 14 pounds per patient; 20.5% had neither lost or gained; and 20% had gained. Finally, the mean postprandial plasma glucose levels were somewhat lower

off oral agents and on diet or diet plus insulin. The institution of this diet program has also permitted many insulin-dependent adult diabetics in the Grady Clinics to reduce or eliminate insulin therapy: in 1973 only one-half as much total insulin was used as had been used in 1972, and insulin therapy has now been discontinued in over 1000 previously insulin-dependent obese diabetics. It hardly needs to be stated that these results are considerably more encouraging than almost any previously published.

An intriguing aspect of Dr. Davidson's work is the costs involved, since it might be argued that such an intensive dietary program would be very expensive. He calculates that the retail cost to the patients of the sulfonylureas was about \$140,000 per year, while the cost of insulin therapy for the 40% who required it after stopping sulfonylureas was about \$5000. It is clear that the difference in costs, some \$135,000 per year, would go a long way toward the financing of even the most intensive of dietary programs.

Dr. Davidson has also given some thought to the question of why diet therapy has in general been so unsuccessful, and finds that it requires nothing very complex or obscure by way of explanation. Thus, he cites survey data indicating that less than 5% of practicing physicians know how to calculate ideal body weight; less than 5% of physicians know how to prescribe a satisfactory diabetic diet; and less than 5% of physicians say they are willing to spend the time necessary to educate and motivate patients to lose weight. Furthermore, many physicians do not have access to a competent dietitian or nurse who can help them educate and follow diabetic patients, and many dietitians fail to translate diabetic diet prescriptions into food servings that satisfy the patient's therapeutic and economic needs and ethnic preferences. He concludes that "at least 80% of diet therapy failures are due to physician failure, not patient failure."

It should be apparent from the above discussion that compliance touches very close to the social and emotional center of the practice of medicine. A final note concerning the ethical basis of compliance may therefore be in order. The relationship between physician and patient is obviously of the nature of a social contract, rather than a legal or a business relationship. At the present time, considerable ambiguity exists as to the rights and obligations on both sides, ambiguity which bears directly on compliance. The term itself, "compliance," carries a strong implication of submission of the patient to the authority of the physician. According to an extreme view of this relationship as implied by the term "compliance," the physician is the person who "knows what is good for" the patient, and the physician's obligation extends only to the point of informing him of that knowledge

and instructing him on what to do. The patient then has the right to choose to disobey those instructions, just as he has the right not to seek medical help in the first place. Although it is disappointing or frustrating to the physician to have his instructions ignored, the physician does not feel obliged to pursue compliance aggressively. At the other extreme is the position that failure of the patient to follow instructions is never the patient's problem, but rather the physician's, the counterpart of the business ethic, "the customer is always right." In this position, the physician is never released from his obligation to figure out a better way to get around his patient's resistance to therapy in order to achieve the desired therapeutic result. In the view of many physicians, this philosophical perspective means abandoning the authoritarian approach and enlisting the patient as a partner rather than a recipient in the therapeutic enterprise. This approach is perhaps best exemplified by Dr. Robert Loeb's characterization of the ideal relationship between a physician and his diabetic patient: "The patient becomes the doctor, and the doctor becomes the consultant." Looked at in this light, the term "compliance" seems inappropriate; the term "involvement" is perhaps a better one. Although there is no a priori way to choose between the two approaches on strictly ethical grounds, at least one study has shown that adherence to medical regimens is actually better when the approach is participatory rather than authoritarian.¹⁸

Since all patients are different, their reasons for compliance, for non-compliance and for over-compliance will differ widely. It would probably be a mistake therefore to generalize about "the cause of non-compliance" or about "the correct approach." Each of the extreme positions discussed above is probably inappropriate, at least for some patients. Perhaps it would be more useful to view compliance as based on mutual give and take of a rather pragmatic sort: the patient has a right to expect persistent, innovative and individualized efforts from the physician to keep the patient healthy, not just because the physician knows more but because the physician is his advocate. In return, the physician has the right to expect the patient to involve himself in his own care and cooperate in therapy, not because the patient should do what he's told but because that is the only way the physician's expertise has any chance of helping; furthermore, the patient's failure to become involved in his own therapy will frequently mean that later on the physician will be presented with a preventable catastrophe. The physician is then asked to "pick up the pieces" when it is really too late.

Summary

1. Non-compliance is a highly significant problem in

the therapy of both acute, self-limited illnesses and chronic diseases such as hypertension.

2. Non-compliance arises from an array of complex, interacting and changing factors, which differ from patient to patient, rather than from a single overriding cause.
3. Some progress has been made in understanding the factors which produce compliance or non-compliance: not surprisingly, that the nature of the ongoing physician-patient relationship and the specifics of a given physician-patient encounter figure strongly in compliance. The type and duration of disease, complexity of regimen and perception of severity of illness also affect compliance rates.
4. Demographic factors, including educational level, have remarkably little impact on compliance. The learning by the patient of a set of predetermined factual information by itself is generally not sufficient to improve compliance in the non-complaint subgroup.
5. Recent efforts to improve compliance rates among groups of patients previously held to be intractably non-complaint have depended on detailed analysis of the problem areas for patient and physician alike. When the results of such analysis are fed back in a manner which focuses on the key areas, increases in compliance have often been dramatic.
6. In chronic diseases, such as diabetes and hypertension which do not injure or hurt immediately, intensive, long-term patient education, based on an analysis of their areas of least understanding, has been especially successful in increasing compliance. Non-professionals have proven to be at least as effective at these educational and followup tasks as physicians, perhaps more so.
7. The term "compliance" implies an authoritarian basis to the physician-patient relationship which may not be appropriate; "involvement" may be a better term.

Conclusions—Can anything be done?

Although it would appear as though effective measures at enlisting patient cooperation are either nebulous or prohibitively expensive, a number of simple measures suggested by the preceding discussion might be translated into everyday practice.

- One might begin to incorporate some mechanism for determining regularity of medication usage. For example, the urine of patients taking *a*-methyldopa turns dark brown if laundry bleach is added; serum levels of a number of other drugs are also available.

- One can simply calculate the life-span of a given prescription, make a note of it, and see whether the patient's need for refills agrees with the projection. A "run-out-of" date might be noted along with the refill

in the patient's record. Cooperative local pharmacists can be immensely helpful in this monitoring task, particularly if they keep independent drug profiles by patient.

- Complex regimens should be simplified whenever possible. Drugs that can be administered in single doses should be used preferentially. Confusing, overlapping dosages (e.g. one medication q6h plus another q4h) should be avoided. Medication schedules should be tied to regular habits ("keep it next to your toothbrush;" or "before meals"), but be sure to establish your patient's habits first (remember that many people eat only two meals/day, often for economic reasons). Medications should probably be prescribed at specific times, e.g. "8:00 a.m. to 12:00 noon to 8:00 p.m.," rather than "TID."

- Home visits can be extraordinarily revealing in figuring out a knotty compliance problem; for selected patients they may be well worth the time: an unsuspected cabinet full of partially used, confusing pill bottles or a generally chaotic household which prevents any regular regimen may suddenly be revealed.

- The nurse or assistant might prove particularly useful in any or all of the above, and in addition might probe for specific understanding of urine testing, diet instruction or medication schedules. The patient is frequently embarrassed to admit poor understanding to the physician.

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Changing Concepts of the Treatment of Primary Breast Cancer

Paul P. Carbone, M.D., F.A.C.P.

Breast cancer management is changing very rapidly. The NCI (National Cancer Institute) has a Breast Cancer Task Force, a concerted effort to develop not only laboratory findings, but also to the clinical improvement of the treatment. Most of us have been taught that breast cancer starts off as a lump, slowly gets bigger, eventually involves the axilla, and as a late manifestation the cancer disseminates throughout the body. We feel more and more now that breast cancer may be more disseminated than we think. Until we begin to appreciate this and develop systemic treatments, the long term mortality is not going to change.

Breast cancer is an important problem. Statistically it makes up 27% of all the cancers in females. Numerically, about 90,000 new cases this year are estimated to have occurred with 35,000 deaths due to breast cancer.¹ Yet in the last 40 years, there has been absolutely no improvement in the mortality or survival statistics. The mortality statistics in breast cancer are exactly the same as they were 40 years ago. The question is why.

A tremendous amount of controversy is engendered over the best operation. Radical mastectomy, simple mastectomy, lumpectomy and a segmental resection are all viable options.² The technical aspects of breast cancer surgery have been stressed. In reality we should look at breast cancer as a biological question.

The basis for most of the current surgical treatment of breast cancer has been that breast cancer starts as a small localized process, and then with time develops into a local growth and invades the local normal tissues. Then lymphatic invasion occurs and with more time node invasion takes place. Eventually dissemination occurs as a blood borne metastasis. The implication is that breast cancer is a localized disease, and then spreads late in the course to the systemic circulation. As a result of this particular hypothesis the treatment of breast cancer has been wide local excision, en block dissection of the lymph nodes and normal tissues, the so-called radical mastectomy. And because the surgeon's knife is fallible, postoperative radiotherapy is used almost routinely to help mop up what the surgeon may miss. An extended radical mas-

tectomy, where the sternum is split and the internal mammary glands are dissected, is also an option. But what are the facts? As I mentioned, there has been no improvement in the survival, despite massive surgery and routine use of postoperative radiotherapy. Clinical trials have indicated that with less than a radical mastectomy, the results seem to be comparable to a radical.³ The extended radical has no benefit over the radical mastectomy.⁴ When lymph nodes are involved, removal or leaving them really does not make any difference. We also know that breast cancer is not a single focus of disease. About 40% of breasts with one cancer have severe atypia or abnormalities in other parts of the same breast. The implication of these findings is that breast cancer may not be a localized disease. Breast cancer, since it is not a localized disease, cannot be treated with local means only.

My interest is in the chemical treatment of cancer, chemotherapy. We all know in Hodgkin's Disease, even when the disease is very advanced, or in children with acute lymphocytic leukemia, the results are very dramatic. For instance, in Hodgkin's Disease we talk about 90% responses, 75% complete remissions, even with Stage IV disease. We have disease free survival of 5 and 10 years following the treatment with the 4 drug combination therapy, known MOPP without maintenance treatment.⁵ These patients, as far as we can tell, are cured of their disease.

On the other hand, in the solid tumors, and breast cancer certainly is an example, we rarely see complete responses, and rarely is this associated with a marked prolongation of survival. We can ask the question, do we have drug resistance? Or is there the possibility that some other problem exists, namely kinetic resistance? What we mean by drug resistance is that the right drugs are not available. Kinetic resistance is defined as relative resistance to chemotherapy. When the tumor is small and microscopic, the drugs are quite effective. The problem is not that the drugs are incapable of treating the disease, but that when we apply the drugs clinically, the tumor kinetics, the growth characteristics of the tumor, and the number of tumor cells make it extremely difficult to treat and impossible to cure. The implication of the drug resistance hypothesis is that we must continue to look for new drugs. The question is how long do we have to wait to get the right drugs. On the other hand, if we accept the possibility that the drugs are effective but that they are used at the wrong time (the kinetic resistance hypothesis), then we have a testable hypothesis.

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This is the Sixth Annual Peter Hervey Smith Memorial Lecture presented at Sharon Hospital, Sharon, CT., on November 8, 1975.

This approach doesn't demand drugs, but rather implicates a new way to use the available drugs. Namely, we should not wait until the patient has gross disease. The patients have systemic, microscopic metastatic disease at the time of surgery. Therefore, good local treatment and systemic treatment must be combined, the combined modality approach.

We can look at the animal data to see if this concept can be supported.⁶ In the animal systems, tumor cells grow rapidly when the numbers are small, and then as the tumor increases in size the tumor growth rate slows down. The tumor becomes resistant to chemotherapy. Experimentally, curability with drugs is associated with a high cell growth rate and low cell numbers. Resistance in the animal tumors is related to a low growth rate and high cell numbers. In the animals, surgery alone is not curative and chemotherapy alone may not be curative; together cures can be obtained. What is most exciting is that regimens that may be only moderately effective in advanced tumors, when applied in the early disease situation, may be highly effective, if not curative.

The implications of the new biology of breast cancer are to add to treatments that are locally effective, systemic chemotherapy. As medical people we see breast cancer as a systemic disease. We think that most patients present with gross metastatic disease. In fact, 90% of all breast cancers, when they present, have only localized or regional disease. Many patients with clinical early cancer will eventually recur with metastatic disease. Therefore, most breast cancers are systemic at the time of presentation.

The radical mastectomy has been a standard procedure for many years. In a trial done 10 years ago, all patients with Stage I and II had a radical mastectomy and radiotherapy was added to a random half. The data indicated very clearly that radiation therapy added to a radical mastectomy had absolutely no added benefit compared to patients who had a radical mastectomy alone.⁷ The routine application of postop radiotherapy is not a tenable or a necessary procedure.

What about less surgery? In a trial sponsored by the Breast Cancer Task Force at the NCI, Stage I breast cancer patients were randomized to a simple mastectomy (just removing the breast), a simple mastectomy plus X-ray therapy, or a radical mastectomy. At three years, there is no evidence to indicate that these three procedures resulted in any differences in terms of disease-free survival. In patients with Stage II disease (the lymph nodes palpable in the axilla) the randomization occurred between a simple plus X-ray versus a radical. Again, there is no difference in disease-free survival at three years.⁸ While we can look upon this trial as a question of testing one technique versus

another, we're really asking a very interesting biological question. In the radical mastectomy one removes the axillary glands, and the implication is that one has to do this to cure the patient. We know that 39% of these patients have cancer in the axilla.⁹ And so what one is asking is does it make any difference whether you leave the cancer in the glands or remove it. At this time there are no major differences in the treatment arms. The reason is that patients are dying because of systemic disease, and taking out the glands or leaving them in doesn't make that much difference. The lymph nodes also contain lymphocytes that may convey a tumor immunity. Are the local lymph nodes important in terms of their immunologic effects? The local lymph nodes, whether you remove them or leave them in or treat them with X-ray, do not have a major effect on the disease course. Surgery can be replaced by X-ray therapy of the lymph nodes. Doing less surgery may be equivalent to a radical, but there is no evidence to indicate that the overall statistics are going to be changed by doing less surgery. It's hard to imagine that less surgery will produce better results. In other words, if we are going to be happy with the results that we have now, then we can probably do this same thing by doing less surgery. But there is no evidence that we're going to do better or decrease the mortality rate by doing less surgery.

Now let us examine systemic treatments. What we have said is that primary treatment is important. It must be effective. You can do several kinds of operations and come up with the same answer. What about systemic treatment? Chemotherapy is a relatively new science. The first drug was Nitrogen Mustard, which was developed in New York in the early 40's. The next drug came along in the late 1940's, Methotrexate, but since then there has been a tremendous increase in the number of drugs, and it's estimated now that there are 40 therapeutic agents available for systemic treatment.¹⁰ None of these are curative in breast cancer when used in the advanced situation.

In breast cancer we do have a variety of drugs, Adriamycin, Cyclophosphamide, Methotrexate, 5-FU and Vincristine, that have response rate anywhere from 21 to 43%. (Table 1)¹¹ By response, in advanced disease we mean that patients who have recurrent cancer, inoperable tumors or failures following X-ray therapy have their tumors shrink by 50% or more. Rarely does the tumor disappear. Response duration is usually measured in terms of 4-6 months, not a very dramatic effect.

What can we do to improve the response rate? Obviously one of the things we learned in Hodgkin's disease is that combinations are better than single agents. The principles that we use in developing combination chemotherapy include the use of drugs that

TABLE I
SINGLE AGENT THERAPY IN ADVANCED BREAST CANCER

<i>Drug</i>	<i>Percent responses</i>
<u>Alkylating agents</u>	
cyclophosphamide	34
nitrogen mustard	35
L-phenylalanine mustard	23
thioTEPA	30
<u>Antimetabolites</u>	26
5-fluorouracil	26
methotrexate	34
hydroxyurea	12
<u>Metaphase inhibitors</u>	
vincristine	21
vinblastine	20
<u>Antibiotics</u>	
adriamycin	37
mitomycin-C	38
<u>Random synthetics</u>	
BCNU	21
CCNU	12
MCCNU	6
hexamethylmelamine	28
dibromodulcitol	27

have different mechanisms of action; and different or non-overlapping toxicities. They are administered in the maximum tolerated dosage and intermittently to allow host recovery. We are aiming to improve the response rate, the complete response rate, to have acceptable toxicity, and what I think is very important, is to develop combinations or approaches that can be used with surgery or X-ray in the primary treatment.

I am chairman of the Eastern Cooperative Oncology Group (ECOG), involving 39 medical centers and universities. ECOG includes people as far away as Edmonton, Alberta, Canada. We have representatives also in South Africa and Paris, France. In 1971, in a study of patients with advanced breast cancer, we asked the question, "what is the relative effectiveness of one single agent, which is L-phenylalanine mustard (L-PAM), versus a three-drug combination of Cytosan, Methotrexate and 5-FU (CMF)."¹² We wanted to see whether response to a single agent was less effective than a combination. More importantly, this study attempted to answer another question. We were using L-PAM, a drug I'm sure you've heard about recently being used postoperatively in patients with positive nodes. The 3-drug combination CMF was also used in a combined modality trial. In the clinical study, we wanted to determine the activity in advanced disease and then have the same regimens in the more favorable clinical situation following surgery. We wanted to see what effectiveness these drugs had against advanced disease and how this translated to activity against early disease. This goes

back to the question that I raised earlier. If we had drug resistance we shouldn't see any better effect in the early situation than in the advanced situation. On the other hand, if we had kinetic resistance, then these regimens, which only have modest effects in the advanced disease, may be very effective in the early disease state. This study would also tell us what kind of activity we needed in the advanced disease patient to get an effect in the early disease situation. If we needed a treatment like the MOPP combination therapy, which produced 80% complete responses and 5 year cures in the advanced disease, in order to be effective in the early disease, then it was going to be a tough battle to develop that degree of effectiveness in breast cancer. However, if something as simple as L-PAM was effective, then this would not be hard to achieve in other cancers as well.

It was not too surprising that the combination, CMF, was better than L-PAM. CMF produced a response rate of 53% as compared with the L-PAM, which was only 19%. The complete response rate was very low. The responses lasted only about 9 months, and the improvement in survival, even with the patients with the best response, was in the order of 18 months. These are modest effects in advanced disease patients.

One of the other major questions in chemotherapy is: if 3 drugs are good, what about 4, 5 or 6? My feeling is that one may be getting into a bind by combining a large number of drugs. In a study done at Mayo Clinic, a 3 drug combination of Cytosan, Fluorouracil and Prednisone was compared to the same three drugs plus Vincristine. The response rate certainly was no better for the 4 drugs as compared to three drugs.¹³

In another study done in the Eastern Group, we asked the question, "Is there any advantage to adding Prednisone to CMF?" The side effects of Prednisone are considerable. The study is still going on, but Prednisone does not add significantly to the 3-drug combination CMF. In addition, we examined the use of Adriamycin and Vincristine, another combination, to find out whether patients who were resistant to CMF had any resistance to Adriamycin and Vincristine. Our Group has shown that these two combinations are mutually non-cross-resistant. In other words, patients who fail this CMF can respond to the Adriamycin-Vincristine.

If one has 5 drugs, Cytosan, Methotrexate, Fluorouracil, Vincristine and Prednisone, what happens if you use the 5 drugs sequentially? When the patient fails one drug, the second is used and so on until all 5 drugs are used up. The study done by the Southeastern Group, another cooperative group in the United States, showed that chemotherapy with sequential

drugs was not better than the simultaneous combinations of drugs.¹⁴ Another group, the Western Cooperative Group, asked the same question, sequential drugs vs. simultaneous combinations. The results were better using the simultaneous combinations as contrasted to sequential use of drugs.¹⁵

Breast cancer has primarily been treated by surgeons and radiotherapists with local therapies. About 50% of the patients are going to recur. They are treated with some type of hormone manipulation, oophorectomy, estrogens, etc. If the patient responds, a second hormonal treatment, either other hormones or adrenalectomy or hypophysectomy are tried. If the patient fails these then chemotherapy is administered and eventually all patients will receive chemotherapy. The advanced disease patient has been most frequently given chemotherapy. I have demonstrated that the results with chemotherapy in these patients are relatively modest. To try to cure the advanced patient is like trying to move the George Washington Bridge after it's been built; it's very difficult. On the other hand, changing the site before it was built is easy. We have suggested that drug treatment regimens must be combined with surgery and radiotherapy in the primary treatment, the so-called combined modality approach.

Let us look at the question of drug resistance vs. kinetic resistance in an experimental tumor system.⁶ (Figure 1) In this tumor 1 million cells are injected intravenously and all animals died by day 28 or 29.

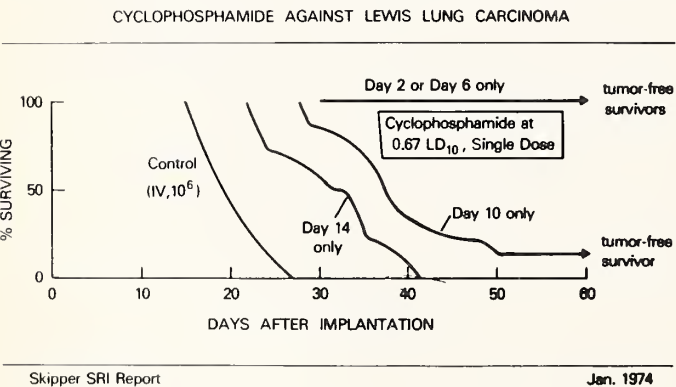


Figure 1
Cyclophosphamide against Lewis lung carcinoma; a laboratory study of chemotherapy against early and late disease.⁶

Now if a single drug like Cyclophosphamide is administered to another group of animals beginning on day 14, just before the first animal dies a slight prolongation in survival (20 or 30% increase in survival) results. Another group of injected animals are started on treatment on day 10 with the same drug, a slightly better survival results as well as an occasional cure. What is most impressive is that the same chemotherapy that was only moderately effective against the

advanced disease, given to another group of animals treated on day 2 or day 6 after injection, 100% cures result. What we do clinically with drug therapy is to treat the patient when he is at the advanced stages. What I would like to suggest is that early treatment is like treating on day 2 or 6. A marked enhancement of the effect of the chemotherapy can be achieved. Regimens that may be minimally or moderately successful in advanced disease may be highly curative when given at more optimal times.

In the same tumor system, the tumor is injected into the thigh of the animal and a lump develops.⁶ The control animals all are dead by day 31. Surgery alone on day 12, when the tumor is grossly visible and is about a gram in size, results in no survival improvement. Why? Because the animal has systemic metastases. In another group of animals, instead of using the surgery, chemotherapy is given on day 13 and day 20, treating the systemic metastases but not the primary, the animals still die. In a fourth group of animals, the same surgery was done, the same chemotherapy administered, and results were 50% cure. This is the kind of approach we are suggesting for breast cancer in the clinical situation.

In which patients do we suggest this approach? This treatment should not be used indiscriminately in all patients. The group of patients most likely to benefit are those with positive nodes. The 10 year survival statistics and failure rates in patients who had primary operable breast cancer are clearly related to lymph node involvement.⁷ If the lymph nodes in the axilla were not involved microscopically, disease free survival occurs in 3 out of 4. On the other hand, if the lymph nodes are involved, the statistics are reversed. Three-quarters of the patients are dead and only 1 out of 4 patients are alive. All these patients were operated for cure. If 4 nodes are involved microscopically or histologically, the survival is only 13% in 10 years. This is not early cancer. These patients are dying not because primary surgery was ineffective, but because they had microscopic metastatic foci that had not been treated by just removing the local tumor. This is the group of patients that we feel justified to test this hypothesis clinically.

In the *New England Journal of Medicine* earlier this year we reported a study in which L-PAM was used as an adjunct to surgery in patients with positive lymph nodes.¹⁶ All patients had operable breast cancer. Those patients who had positive lymph nodes histologically were randomized to either a single chemotherapeutic agent, L-PAM, or a placebo. They were stratified on the basis of age and degree of lymph node involvement. Why L-PAM? Well, the reason is that breast cancer is not treated primarily in major institutions, but rather in smaller hospitals. So we

gathered a group of surgeons from good hospitals who were willing to test the hypothesis. These surgeons were willing to say that maybe there is another way to treat breast cancer. We needed a treatment that was fairly simple to give, preferably oral. We wanted a treatment that would not produce a lot of side effects. The doctors treating the patient did not know whether he was giving a sugar pill or a chemotherapeutic agent. No patient had severe complications because of the treatment except mild nausea. There was bone marrow toxicity. The results indicated, very happily, that using this simple treatment one could decrease the recurrence rate of patients with surgery alone from something like 22% to less than 9.7%.

In the control patients who were premenopausal, the recurrence rate was 31%. The drug-treated group had recurrences in only 3%. The first recurrence occurred in the drug treatment group after a year of treatment. At the time the results were published, the recurrence rate in the postmenopausal woman was about 23%, and 10% in the drug treated group ($p=.10$). We now have accumulated 400 patients. The results are also significant in the postmenopausal women. Therefore, a mild treatment program had a dramatic effect on disease recurrence. Survival is still being followed. Most patients with breast cancer that are going to recur will do so within the first 3 years, and by 5 years about 90% of the recurrences will occur. We are very pleased that a drug that had a modest effect against advanced disease was able to decrease the recurrence rate by 50%.

We also had another test of this hypothesis. Dr. G. Bonadonna at the Milan Cancer Institute in Italy also was working with us. A study was done similar to our protocol in the United States, with the same stratification, but they compared surgery alone and surgery plus combination chemotherapy.¹⁷ (Figure 2)

BREAST ADJUVANT CHEMOTHERAPY STUDY

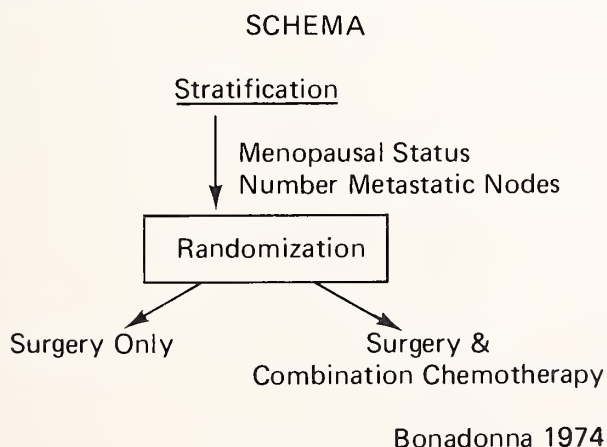


Figure 2

Schema of breast adjuvant trial Milan, Italy.¹⁷

The combination was Cyclophosphamide, Fluorouracil and Methotrexate. Cytoxan was given daily for 14 days, 5-FU was given intravenously on days 1 and 8, and Methotrexate was given on day 1 and 8. (Figure 3) Dr. Bonadonna accumulated 385 patients.

ADJUVANT INTERMITTENT COMBINATION CHEMOTHERAPY *															
Treatment Day															
DRUGS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15 → 28
CTX po 100 mg/m ²	→														NO THERAPY
5-FU IV 600 mg/m ²	↑							↑							
MTX IV 40 mg/m ²	↑							↑							

* Cycle repeated q4 weeks for 12 cycles Bonadonna

Figure 3

Drug schedule for CMF combination chemotherapy regimen.¹⁷

The combination chemotherapy program was the same tested as we had tested in the advanced disease patient. None of the patients received routine postop radiotherapy. By September 1975 in the patients who received the surgery alone, the recurrence rate was 38 out of 165 in-patients. The patients who received the 3 drug combination and only 5 recurrences out of 185, a highly significant difference.

In the patients that had 4 more positive nodes, a really bad risk group, at 2 years, over 50% of the patients had had recurrence who had surgery alone, and in the chemotherapy plus surgery group 95% of the patients are still disease free.

This study was published recently in the *New England Journal of Medicine*. Again, I think the most impressive thing is that CMF and L-PAM are both effective. In the premenopausal women the two programs may be quite similar. In the postmenopausal woman it does look like the combination chemotherapy is better. With the combination, toxicity occurred in 60% of the patients. This consisted of alopecia, G.I. toxicity and hemorrhagic cystitis.

Other adjuvant protocols are going on in the United States. Dr. Fisher and I are looking at L-PAM and FU vs. L-PAM. In a future study we will be looking at immunotherapy plus chemotherapy.¹² The Mayo Clinic is looking at a 3-drug combination of cytoxan, FU and Prednisone. They are also adding postop radiotherapy to one group receiving chemotherapy. Another study by Acute Leukemia Group B is looking at 5 drugs. Dr. Morton at UCLA is looking at chemotherapy, plus immunotherapy with BCG or tumor cell vaccine. Another trial being done at the Cleveland Clinic is adding antiestrogen to chemotherapy. Dr. Bonadonna is now looking at whether it is

necessary to give 12 months of CMF treatment. He will be testing 6 months of CMF vs. 12 months. I feel very hopeful that we will be able to answer questions about what kind of chemotherapy needs to be given. We will try to diminish toxicity and enhance effect. This is the ultimate goal of all clinicians.

One of the most important advances in the last 10 years has been the demonstration that hormone therapy response to breast cancer can be predicted by a biochemical test. Oophorectomy was first used in 1896 by Beatson. Subsequently adrenalectomy and hypophysectomy have been used as alternative hormone treatments. The response rates are about 20-35%. Jensen and more recently McGuire have shown that hormone dependence is associated with a biochemical receptor in the cytoplasm of the tumor cell that can bind the estrogen.¹⁸ This receptor is necessary for the estrogen to go into the nucleus and turn on nuclear DNA. Those tumors that are hormone dependent have the receptor. The hormone independent tumors lack the receptor. About 65% of patients with breast cancer have a hormone receptor. In about 35% of the patients the receptor is absent.

In those patients who are ER negative, less than 7% of the patients will respond to endocrine treatments. If the receptor is positive the response rate approaches 60%. The possibility exists of eliminating ineffective therapy and selecting patients for the hormone therapy. Dr. McGuire has reported recently that in addition to the estrogen receptor, if a progesterone receptor is present the response occurs in 95% of patients.¹⁹ Those patients who will fail to respond can be selected out. The selectivity of treatment which is highly specific is a truly important goal.

The question is not hormone therapy vs. chemotherapy, but combining the two. Trials are underway combining chemotherapy with hormone therapy.

Another problem is the node negative patient. Clinically the evaluation of the axilla is very poor in deciding whether the nodes are involved or not. In patients who were felt to have no axillary glands clinically, 39% of the patients were found to have histologic involvement at the time of surgery. Conversely, if the physician, or surgeon, thought that they were positive, still 1 out of 4 patients was positive histologically.⁹ So this tells us that while the primary may be treated with less than a radical mastectomy, we need to dissect the axilla to get the histological prognostic features of axillary involvement.

We would like to do this with a biochemical test. Patients with negative nodes are going to recur, and some patients with positive nodes are not going to recur. How can you become more selective in deciding which patients should receive chemotherapy? Dr. Tormey, working for me at the Cancer Institute, is

looking at biochemical markers. In breast cancer, one of three biochemical or laboratory tests are positive in 97% of patients with metastatic disease.²⁰ One of these tests is the CEA assay and it correlates with response. If the CEA level is abnormal to begin with and the patient responds to chemotherapy, the CEA level decreases indicating a relationship between tumor level and CEA level. Conversely, if the patient fails to respond the levels go up, indicating that again there is a correspondence between these levels and the response of the tumor. The kind of a test we are aiming for might be used in the patient who has a simple excision of the tumor. Repeating the test postoperatively instead of doing an axillary dissection will tell us which patient to treat. Even if they are lymph node negative and the tests are positive, we should begin chemotherapy.

The combined modality approach can be summarized as follows. The primary tumor must be removed to establish the diagnosis with certainty. On the primary tumor an estrogen receptor assay or possibly a progesterone receptor assay will need to be done. In those patients who have a high risk of recurrence, namely with a positive lymph node, or maybe in the future with positive markers, we must consider some type of adjunct therapy. Here again the strategy would be that in those patients who are ER positive we consider endocrine therapy as well as chemotherapy or immunotherapy. In those patients who are negative we bypass the endocrine approach and use chemotherapy or immunotherapy, hopefully to improve the cure rate. Those patients with a low risk we can afford to observe and watch these particular patients.

We obviously do not have a single recipe as a cure-all to apply to all patients. We are developing a concept that is more biological. In breast cancer the advances will undoubtedly change the mortality statistics. The treatment approaches that I've mentioned, plus the screening methods and procedures that have been used, are picking up more and more patients with negative lymph nodes and better prognosis. Our own approaches are for those patients who have positive lymph nodes, and hopefully the combined modality approach will improve the survival as well. The estrogen receptor and the tumor cell markers will be useful to develop specific therapies for specific patients. A high level of markers and positive lymph nodes may imply a more aggressive approach. One positive lymph node with low level markers may require less aggressive treatment. The duration of treatment is still uncertain. I am very hopeful that advances can be made by applying techniques that are already known. We don't have to wait for the laboratory doctors to uncover new leads. We have all the

tools. Through clinical trials the answers are going to come. The approach that we're using in breast cancer can be applied in bowel cancer as well. Duke's A is equivalent to Stage I breast cancer. Duke's B and C are probably equivalent to II and III breast cancer, and certainly Duke's D is early Stage IV breast cancer. To me the exciting possibility is that the L-PAM effectiveness and the CMF effectiveness in breast cancer tells us that what we need is a regimen that has anywhere from a 20 to 50% response rate in bowel cancer. We have these programs now. Clinical trials are in progress using those regimens in the same sort of way. If, in breast cancer and bowel cancer, chemotherapy becomes important in the treatment strategy, chemotherapy will become an established part of cancer treatment for major tumor types. I feel confident that it will. The chemotherapists, surgeons, radiotherapists and pathologists must get together and, as a team, develop the best treatment program for the individual patient.

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Albumin 3.0-5.5 gm/dl	3.3 gm/dl
Cholesterol >40 150-300 mg/dl <40 140-270 mg/dl	154 mg/dl
Triglycerides 30-175 mg/dl	107 mg/dl
Uric Acid 2.5-8.0 mg/dl	3.4 mg/dl
Calcium 9.0-11.0 mg/dl	8.1 mg/dl
Phosphorus 2.5-4.5 mg/dl	3.8 mg/dl
Serum Iron 37-184 mcg/dl	223 mcg/dl
Globulin 2.4 gm/dl	3.10 gm/dl
BUN/Creatinine 10:1 Ratio	11.25

Total Bilirubin 0.2-1.2 mg/dl	1.1 mg/dl
SGOT 0-48 U/L	16 U/L
SGPT 0-45 U/L	48 U/L
Alk Phos 30-115 U/L	123 U/L
LDH 100-235 U/L	177 U/L
Sodium 135-145 meq/L	131 meq/L
Potassium 3.5-5.0 meq/L	4.0 meq/L
Chloride 96-106 meq/L	98 meq/L
Carbon Dioxide 19-26 meq/L	25 meq/L
A/G Ratio 1.1-1.8	1.06
SGOT/SGPT Ratio	0.33

TEST	NORMAL RANGE	RESULTS
GLUCOSE	65-110 mg/dl	100 mg/dl
P.B.I.	4-8 mcg/dl	mcg/dl
T.T.	4-10 mcg/dl	mcg/dl
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Primary Care Physicians in Connecticut, Distribution and Characteristics

Summary Report

James E.C. Walker, M.D., Norman L. Armondino, M.A. and Sarah S. Hirakis, M.P.H.

The Commission on Hospitals and Health Care, as part of its responsibility for statewide planning, created a number of task forces in 1974 to make in-depth studies of health priority issues such as long-term care, acute care delivery services, primary care, hemodialysis centers, and open heart surgery and presently is in the process of establishing a task force on ambulatory surgery programs.

The following pages consist of the findings, conclusions and recommendations, in summary form, developed by one of the committees of the Primary Care Task Force chaired by James E.C. Walker, M.D. The report is based on the analysis of primary care physician data obtained from November, 1974 to March, 1975. Figure 1 presents a map of the State of Connecticut which identifies primary care shortage and surplus towns and indicates the magnitude of shortage and surplus in full time equivalents.

The entire study of the distribution of primary care physicians in Connecticut will be published and copies can be obtained from the Commission on Hospitals and Health Care, 340 Capitol Avenue, Hartford. According to usual procedures, the task force recommendations on the distribution of primary care physicians will be presented to the Commission on Hospitals and Health Care at a public hearing that is tentatively scheduled for Tuesday, July 13, at 7:00 p.m. The Commission invites all interested individuals and agencies to testify before the Commission concerning any aspect of the study so that they will have an opportunity to consider this testimony prior to taking action on the recommendations.

It is suggested that confirmation of the hearing date and location be obtained by contacting the Commission about July 1 at 566-4517.

Definition of Primary Care

Primary care, as referred to in this study, includes both first contact and continuing care for the majority of health needs of most people of all ages. What makes primary care unique as a professional specialty is not where the care is given or which primary care tasks are being performed at a given time, but whether these tasks are related to the continuing health needs of the patient by the provider(s). According to this definition, primary care is more than first-step management for acute patient problems and follow-up management of current problems; it also includes chronic disease management, rehabilitation, health education, the prevention of disease and referral to specialists when indicated.

The provider of primary care concerns himself with the patient's overall physical and mental health and related social problems. He functions as coordinator for the recipient of care; even when he makes a referral to specialty or supportive services, he still retains the overall ongoing general, if not the specialty, responsibility for the patient.

The manpower whose chief responsibility is to furnish the continuing primary care needs of people includes the family physician and/or general practitioner, the general internists, the general pediatrician and those nurse practitioners, physician's assistants* and staff or visiting nurses associated with them. Some obstetricians perform a similar function for their patients during their child-bearing years. Although other physicians, nurses and other primary care providers often perform isolated primary care tasks for their patients they tend to confine themselves to their specialties. The same applies for the dentist in his ability to provide primary care. A large variety of health providers serve as referral sources for primary care patients including, but not limited to, other medical specialties, dental specialists, community health care workers, nutritionists, pharmacists, podiatrists, psychologists and social workers.

The specialties included in this study are those which provide the major portion of primary care—the general/family practitioner, the internist, and the pediatrician. The primary care provided by hospital interns and residents is also included. Data was also

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*The term physician's assistant is used to include physician's associate and other related disciplines as adopted by the Primary Care Task Force and reported in its *Interim Report* to the Commission on Hospitals and Health Care—May, 1975.

collected on the primary care provided by obstetrician/gynecologists but due to a lack of clarity in what was included as primary care, this data is not included in the report.

Introduction

The major purpose for conducting this study was to analyze the distribution of primary care physicians in Connecticut and to identify areas of need for the purposes of planning. Interesting by-products of this study include a clearer understanding of the practice characteristics of primary care physicians and the development of a methodology which will be useful for future analysis. The following provides *only* a summary of the methodology and findings. The full report includes a more detailed coverage of both the methods utilized and the findings of the study.

Methodology

The development of data contained in this report was made possible through questionnaires which were sent to the 2,073 primary care physicians (general/family practitioners, internists and pediatricians) licensed in Connecticut and the 21 general hospitals with intern and resident programs. The licensed physician response rate was 77%. Estimates were made for non-respondents. The hospital response rate related to interns and residents was 100%.

Data from these questionnaires permitted an identification of the actual hours devoted to "primary care" by licensed physicians. Primary care was generally defined as a continuing general responsibility for care as opposed to a referral or specialty practice. This led to the concept of the "full-time equivalent"* (FTE) physician in primary care which has enabled the specific allocation of physician hours in primary care to each town in the state or to several towns if multiple

practice sites were reported. The inclusion of hospital intern and resident contributions to providing primary care, also in terms of the FTE, has permitted a more exact determination of primary care resources.

A mechanism for attributing hours devoted to primary care by those who did not respond to the questionnaire was also developed. Respondents and nonrespondents within primary care specialty groups were similar in terms of age and years licensed in the state. Hours worked in primary care by respondents were found to vary according to specialty, age and population density of practice town. After categorizing nonrespondents in terms of these variables from licensure records, estimated time was assigned to them according to the effects of these variables on hours spent in primary care.

Another significant methodological component was the development of criteria to specify not only shortages but also adequate and surplus population to full-time equivalent physician ratios. Criteria development took into account hourly, daily and yearly workload levels of physicians providing full-time primary care and incorporated the currently expressed demand as well as a factor to account for unexpressed demand, or potential need, for primary care in terms of visit rates as summarized in Table 1. The average numbers of visits per hour utilized in Table 1 are for patients of all ages and assume more pediatric and few adult visits per hour. The ideal visit rate is supported by national data indicating a current mean visit duration of 14 minutes.¹

The office hours per day utilized in criteria development are based on national data which indicate office hours per week of 34.4 for general practice, 29.5 for internal medicine, and 36.2 for pediatrics.² The average, weighted for the 1974 proportion of licensed physicians in each specialty found in Connecticut (33.9% general/family practice, 47.1% internal medicine, and 19.1% pediatrics), is 32.5 hours per week for the three specialties combined or 6.5 hours per day. A reduc-

*Defined as 50 hours per week in primary care activities (50 hours is approximately the national average direct care work week of primary care physicians).

Table 1
DEVELOPMENT OF CRITERIA FOR DETERMINING
SHORTAGE, ADEQUATE AND SURPLUS LEVELS OF PRIMARY CARE PHYSICIANS
FROM RATIOS OF POPULATION PER FULL-TIME EQUIVALENT PRIMARY CARE PHYSICIAN*

Average Primary Care Visits per Hour**		Office Visits in 5.5 Hours per Day**	Visits per 240 Day Year (Supply)	Average Annual Primary Care Visits per Person (Need)**	Population Potentially Served per FTE Physician	Criteria Designation
6	Too High	33	7,920	2.2	3,600	Shortage Ratio
4	Ideal	22	5,280	2.2	2,400	Adequate Ratio
2	Too Low	11	2,640	2.2	1,200	Surplus Ratio

*General/family practice, internal medicine and pediatrics included.
**See methodology section of text for clarification.

tion by 1 hour to 5.5 hours per day recognizes that current daily office visit work levels may be higher than ideal. A reduction to 5.5 hours allows an additional 4.5 hours per day for seeing hospital patients, making home or nursing home visits, administration, and other primary care related activities in a 10 hour day. A 10 hour, 5 day work week is assumed in the 50 hour week defined as a full time equivalent. A 50 hour week is approximately the current national average work week of primary care physicians.³

The National Ambulatory Medical Care Survey for May 1973-April 1974⁴ reported northeastern United States data of .9 annual office visits per person to general/family practitioners, .5 to internists and .3 to pediatricians. Based on the finding in this study that 5.7% of general/family practice time, 30.9% of internist time and 18.0% of pediatric time is devoted to specialty care, general/family practice primary care visits are reduced to .85, internist visits to .35 and pediatric visits to .25. Total estimated visits then became 1.45 per person. An additional average of .38 visits per person to non-office-based physicians was estimated from data obtained in this study. A resultant current total demand of 1.8 primary care visits per person is obtained. An increase to 2.2 visits recognizes that current visit rates are suppressed by inadequate availability and accessibility of care. The 2.2 visits per person was an estimate developed from prepaid practices which are assumed to contain minimal barriers to seeking needed care. The detailed development of this estimate, which allows for .4 unexpressed annual visits per person is presented in the full report.

Characteristics of Primary Care Physicians

The "full-time equivalent" method developed in this study enabled a more accurate assessment of primary care physician characteristics, especially in regard to how their time is allocated to non-primary care activities. A summary of findings follows:

1. Each group of 100 licensed primary care physicians in Connecticut represents only 73 full-time equivalents in primary care. This percentage varies according to primary care specialty with 83 per 100 for general/family practitioners, 67 per 100 for internists and 71 per 100 for pediatricians.
2. The other professional activities of these physicians, especially their inclination to specialize, accounts for most of the variation between full-time equivalents and license counts. Primary care physicians as a group devote 14% of their professional time to specialty care. The breakdown by specialty is 4% for general/family practice, 22% for internal medicine and 12% for pediatrics. The tendency for primary care physicians to specialize was much greater in urban areas (31% of practice time) than

in rural areas (12% of practice time). The other predominant professional activity was teaching, with 7% of the professional activity of all primary care physicians devoted to teaching. The teaching percentage of all professional time was 1% for general/family practitioners, 8% for internists and 11% for pediatricians.

3. In addition to part-time activity in other than primary care, a significant percentage of licensed primary care physicians devote their full time to specialty practices, teaching, other activities, or actual retirement. This accounts for the remaining discrepancy between primary care full-time equivalents and license counts. The percentage of all licensed respondent primary care physicians who actually spend *no* time in primary care averaged 22%. The general/family practice percentage was 13%, internal medicine was 27% and pediatrics was 23%. Approximately 44% of these physicians are full-time specialists. Specialty practices which included no primary care accounted for the activity of 10% of all licensed primary care physicians, 2% of general/family practitioners, 15% of internists and 11% of pediatricians. Additional variations were found within specialties according to age and population density of practice town.
4. Average hours spent in primary care by practicing primary care physicians varied according to physician specialty, age and population density of practice town. Respondent primary care physicians with at least some time in primary care averaged 46 hours per week in primary care. General/family practitioners averaged 48 hours, internists averaged 45 hours and pediatricians averaged 46 hours. Physicians age 40-64 averaged 49 hours per week in primary care while the age 25-39 average was 42 and the age 65 and over average was 39. The 50-54 age group average was highest with 51 hours. Physicians in suburban and rural areas were found to spend more hours per week in primary care than urban physicians. The average for practice towns with less than 1,000 people per square mile was 51 hours per week while towns with population densities of 1,000-5,999 averaged 48 hours per week and towns with population densities of 6,000 and over averaged only 40 primary care hours per physician per week.
5. The average age of primary care physicians in Connecticut was 49 years and varied by specialty. General/family practitioners were oldest at 56 years with both internists and pediatricians averaging 46 years. Rural physicians also showed some tendency to be older than suburban and urban physicians. Towns with population densities below 299 people per square mile averaged 53 years while towns with

population densities of 300-999, 1,000-5,999 and 6,000 and over all had average primary care physician ages of 49 years. The general/family practitioners were found to have been licensed 10 years longer in the state than other primary care physicians. General/family practitioners averaged 24 years while internists and pediatricians both averaged 14 years.

It is important to examine the impact of these factors on the future availability of primary care manpower. A projection study which is in the initial stages of development will address these considerations.

Distribution of Primary Care Physicians

Assessment of primary care physician distribution at the state, health service area and town levels demonstrates the following:

- 1. At the state level, one full-time equivalent primary care physician was found for every 1,967 people. This ratio is better than the adequate level of one to 2,400 established in this study.
- 2. At the health service area level, all population to full-time equivalent physician ratios were better than the 3,600 to one shortage standard established in this study. With the exception of the Eastern Health Service Area, all areas were also found to be better than the 2,400 to one standard established as adequate in this study. Health service area ratios are presented in Table 2.

Table 2
POPULATION PER FULL-TIME EQUIVALENT
PRIMARY CARE* PHYSICIAN
BY HEALTH SERVICE AREA

Health Service Area	Population per FTE
I Southwestern	1,841.5
II South Central	1,633.0
III Eastern	2,834.4
IV North Central	1,985.5
V Northwestern	2,013.2
Connecticut	1,967.0

*General/family practice, internal medicine, and pediatrics. Intern and resident primary care full-time equivalents are included. The statewide effect of the intern and resident component on ratios in this and subsequent tables was small (4% of all FTE's). The effect of intern and resident FTE's in Hartford and New Haven, however, was significant with 13% of Hartford FTE's and 16% of New Haven FTE's contributed by interns and residents. The ratios of both towns were nevertheless found to remain in the surplus range even with the contribution of interns and residents excluded.

- 3. At the town level, the distribution problems become clear. Although state and health service area population to physician ratios do not reflect a critical shortage, 86 of the state's 169 towns demon-

strate a shortage situation (Figure 1). Conversely, a relatively small number of towns (16) demonstrate a surplus situation. The number of shortage and surplus towns by health service area appear in Table 3.

- 4. Examined in terms of full-time equivalents, the specificity of the distribution problem is placed in bold relief. There are 33 more surplus full-time equivalent primary care physicians than are needed to eliminate town shortages. This determination assumes the redistribution of the full-time equivalent physicians in towns estimated as surplus to those towns estimated to have shortages. Whereas mandating this redistribution is unrealistic and does not speak to the individual desires of towns or health service areas, these findings do permit the establishment of the priorities and plans outlined

Table 3
NUMBER OF TOWNS WITH A PRIMARY CARE*
PHYSICIAN SHORTAGE** AND SURPLUS***
BY HEALTH SERVICE AREA

Health Service Area	Number of Shortage Towns	Number of Surplus Towns
I Southwestern	4	0
II South Central	9	2
III Eastern	39	5
IV North Central	17	1
V Northwestern	17	8
Connecticut	86	16

*General/family practice, internal medicine, and pediatrics. Intern and resident primary care full-time equivalents are included.

**Shortage—Population of 3,600 or more per full-time equivalent.

***Surplus—Population of 1,200 or less per full-time equivalent.

in the Conclusions and Recommendations section of this study. If no redistribution is assumed, 89 additional full-time equivalent (122 licensure record) physicians would be required to achieve ratios in the adequate range in each town. A summary of shortage and surplus full-time equivalents by health service area appears in Table 4. Individual town shortage and surplus FTE's are included in Figure 1.

- 5. The findings of this study indicate that the shortage towns in the Eastern Health Service Area produce the highest physician shortage totals and are generally more distant from towns with excess physicians than other shortage towns in the state. The South Central Health Service Area was found to have the largest number of surplus physicians but the surplus total was primarily the result of the surplus found in one town—New Haven. The total

Table 4

TOTAL OF PRIMARY CARE* PHYSICIAN
SHORTAGES** AND SURPLUSES*** IN TOWNS
WITHIN EACH HEALTH SERVICE AREA

Health Service Area	Shortage Towns	Surplus Towns
	Number of Needed Full-Time Equivalents	Number of Excess Full-Time Equivalents
I Southwestern	5.9	0.0
II South Central	12.4	74.3
III Eastern	37.7	7.8
IV North Central	23.0	25.1
V Northwestern	10.2	14.4
Connecticut	89.2	121.6

*General/family practice, internal medicine, and pediatrics. Intern and resident primary care full-time equivalents are included.

**Shortage—Population of 3,600 or more per full-time equivalent. Magnitude of shortage indicates number of full-time equivalents needed to change town ratio to 3,599:1.

***Surplus—Population of 1,200 or less per full-time equivalent. Magnitude of surplus indicates number of full-time equivalents in excess of the number which would produce a ratio of 1,201:1.

of surplus physicians in the few surplus towns in the Eastern Health Service Area was considerably below the total of shortage physicians; the total of surplus physicians in the South Central Health Service Area surplus towns was far above the shortage totals of shortage towns. The Southwestern, North Central and Northwestern Health Service Area town shortage totals were not very different from town surplus totals. The Eastern Health Service Area therefore appears to have the most serious town shortage situation and the South Central Health Service Area appears to contain the most definite town surplus situation.

Conclusions and Recommendations

The findings of this study which are based on primary care full-time equivalents provide the State of Connecticut with data on the distribution and characteristics of primary care physicians that are more accurate than data available in most, if not all, states in the nation. While these findings provide a valuable base for planning and setting priorities in primary care, they must be used with restraint for the following reasons:

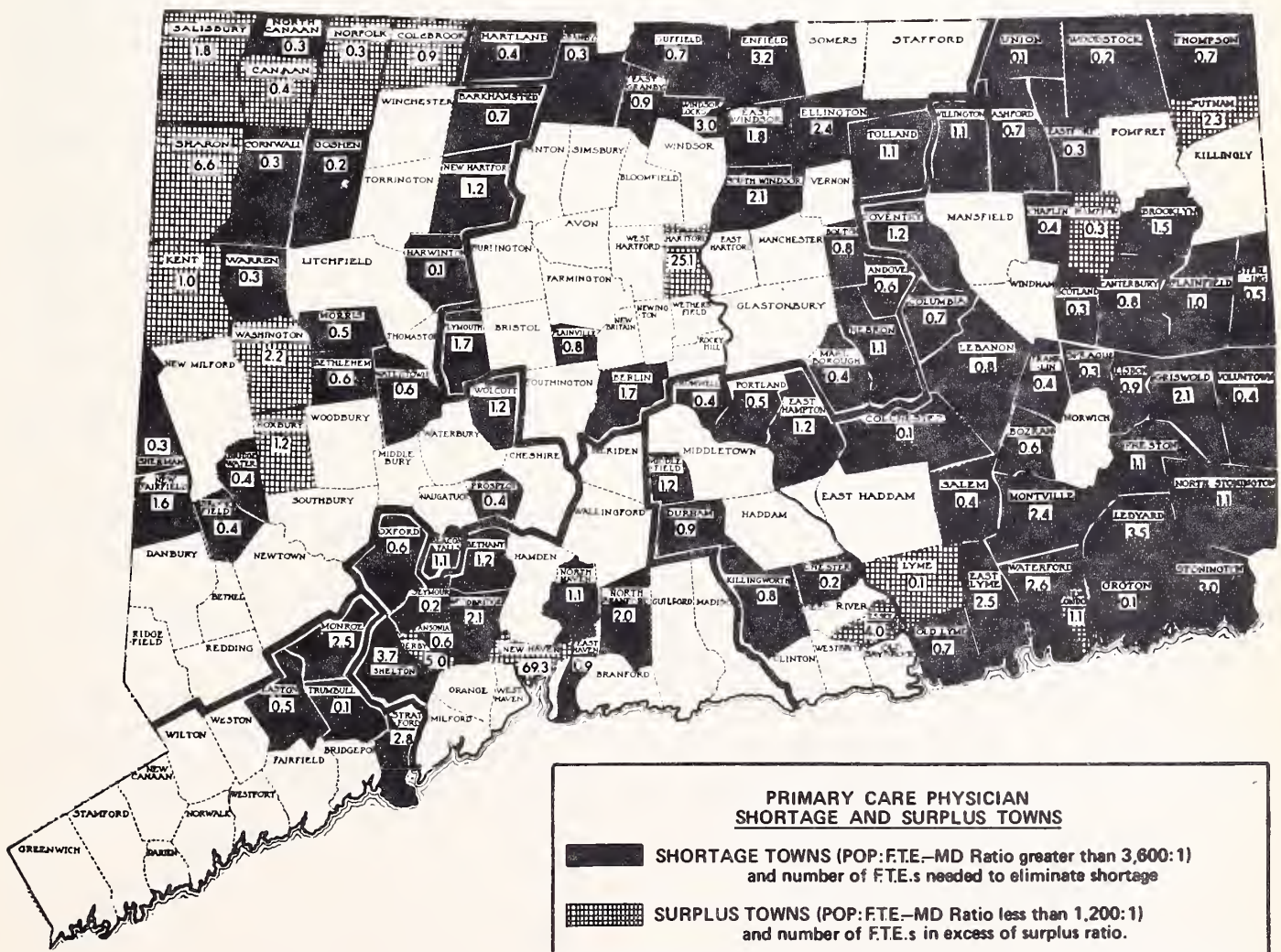


Figure 1

1. The *number* of primary care physicians in a population area is *not* the only determinant of accessibility to primary care or its quality. In the urban areas of the state where this study demonstrates no shortage and even a surplus of primary care full-time equivalent physicians, accessibility to primary care remains a problem, especially for the poor, elderly and other minority groups.* In spite of potentially high availability of primary care, disease incidence remains high among these groups. Limited hours of primary care coverage and transportation and socio-economic barriers create problems for the suburban and rural population as well as among urban groups. Since the above factors are not addressed in this study, the recommendations with regard to physician numbers should not be viewed as solutions to all of the problems related to making adequate primary care accessible to all people.
2. A portion of the data used in this study was derived from estimates which may contain some degree of error. While estimates are felt to be generally correct, an error could have a significant effect on the population to physician ratio of a locality with a small population and a small number of primary care physicians. Critical comments of findings which may be made by small localities should be given special consideration.
3. This study considers the general/family practitioner, the internist and the pediatrician together as comprising the primary care physician pool. The primary care provided by these specialties in private offices, clinics and emergency services is included. Primary care provided by interns and residents in hospital settings is also included. The primary care that may be rendered by other physicians, however, is not included. The need for adult and pediatric primary care is also not analyzed separately. A forthcoming study which will be completed soon, will analyze the population need and physician supply related to adult and pediatric primary care.
4. This study considers the current (1974-1975) needs for primary care and does not take physician attrition into account. Attrition, in some instances, could have a considerable impact on future needs.

*For example, the U.S. Department of Health, Education, and Welfare has designated two census tracts in New Haven, a town identified as having a surplus in this study, as being medically underserved areas (*Federal Register*, Sept. 2, 1975). Also see Elling, R.H., and Martin, R.F., "Health and Health Care for the Urban Poor: A Study of Hartford's North End," Connecticut Health Services Research Series Number 5, which documents the need in a section of Hartford. The supply of primary care physicians for Hartford as a whole was identified as adequate in this study.

A study projecting future needs is now being conducted.

Examined as a whole, and by health service area, the State of Connecticut has no absolute shortage of primary care physicians. Indeed, if physicians were distributed adequately to the 169 towns in the state, there would be 33 more full time equivalents than are needed to eliminate shortages. If the needs of each town are analyzed separately, however, a total of approximately 89 more full-time equivalent primary care physicians (6% of the 1,581 existing full-time equivalents) are needed to eliminate current shortages.

State planners, policy makers and professional groups should therefore recognize that the problems besetting primary care are *not* predominantly based on a shortage in the number of primary care physicians. The problems are rather those of the *distribution* of primary care physicians and their *accessibility* to the population. The primary care physician must be both geographically available to a population *and* sufficiently accessible to meet the primary care needs of that population. Problems may also relate to the appropriateness of the type of care available such as pediatric versus adult care.

While final recommendations regarding the distribution of primary care physicians must await the completion of studies referred to above, certain general recommendations may be made based on the findings of this study.

The 169 towns in the state may be grouped into four categories for the purpose of establishing priorities. Categories are based on population to full-time equivalent primary care physician ratios as follows:

1. *Surplus towns*—population of 1,200 or less per full-time equivalent primary care physician.
2. *Adequate to surplus towns*—population of 2,400 to 1,201 per full-time equivalent primary care physician.
3. *Shortage to adequate towns*—population of 3,599 to 2,401 per full-time equivalent primary care physician.
4. *Shortage towns*—population of 3,600 or more per full-time equivalent primary care physician.

Appendix A lists towns grouped in these categories by health service area. Figure 1 demonstrates the geographic distribution of shortage and surplus towns and indicates full-time equivalent shortages and excesses.

1. *Surplus towns*. The 16 towns in this category may well be serving populations in contiguous towns, especially those bordering the State of New York and the urban towns of Hartford and New Haven.

Whereas it is not reasonable to expect that primary care physicians will relocate in towns of greater need, they should be encouraged to meet the needs of contiguous towns which have a primary care shortage. These towns should not be given high priority for attracting more primary care physicians.

2. *Adequate to surplus towns.* The 43 towns in this category should not be considered as having a shortage of primary care physicians. If a need for more primary care is expressed by these towns, means other than attracting more primary care physicians should be considered to resolve problems of accessibility to care.

3. *Shortage to adequate towns.* The 24 towns in this category may be considered to be in less than adequate circumstances, but not in severe straits. Primary care physicians in these towns should look to methods for increasing their accessibility through the formation of groups and the use of qualified non-physician primary care providers which would make them more continuously available to the population of their towns.

4. *Shortage towns.* The 86 towns in this category can be considered to have a shortage of primary care physicians. That is, the problem of poor accessibility to primary care may well be eased by attracting more primary care physicians to these towns. The number of full-time equivalent primary care physicians needed to eliminate these shortages is 89. In terms of licensure record physicians, whose time includes other than primary care as identified in this study, 122 would be required to derive the 89 full-time equivalents in primary care identified as needed by this study.

These 86 towns should be given priority in recruiting physicians to meet primary care needs but should also consider the following alternatives while recruitment efforts proceed:

a. Of the 86 towns with a shortage, 29 geographically border towns identified as having a surplus (Figure 1). Planning between these towns should proceed and be directed toward meeting needs together.

b. A variety of national studies indicate that the capacity of a physician to see patients can be increased without sacrifice of quality by the use of qualified non-physician primary care providers and improved efficiency of office procedures. These methods should be encouraged.

c. Whereas no evidence exists that the formation of group practices increases the number of patients that can be seen by a physician in a stated number of practice hours, evidence does exist which indicates that distributing the workload among physicians increases their availability during "off hours." A group practice also has the advantage of more readily utilizing qualified non-physician primary care providers and thus increases the number of patients which can be served. Group practices are also more attractive to graduating physicians and increase recruiting strength. For these reasons the formation of group practices should be encouraged especially in shortage towns distant from surplus towns.

In terms of health service areas, the shortage towns in the Eastern Health Service Area produce the highest physician shortage totals and are generally more distant from towns with a physician excess (Figure 1). The South Central Health Service Area has the largest physician excess, due primarily to the town of New Haven. Other areas fall somewhere in between. Priorities should be given to health service areas with regard to these findings.

The value of the findings of this study and forthcoming studies in assisting the state to assess and plan for primary care needs is clear. Data of these kind must be kept current to enable the state to continue this process. The considerable costs in time and money required for completing this study, however, should not be repeated. The systems and computer programs designed for this study should be used to continue updated studies. The "Institute for Primary Care" recommended by the Primary Care Task Force of the Commission on Hospitals and Health Care, in its May, 1975 *Interim Report*, should be initiated to continue this process.

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APPENDIX A

TOWNS WITH SURPLUS, BETWEEN SURPLUS AND ADEQUATE, BETWEEN ADEQUATE AND SHORTAGE, AND SHORTAGE POPULATION TO PRIMARY CARE* PHYSICIAN RATIOS BY HEALTH SERVICE AREA

<i>Towns with Surplus (1,200 or less) Pop./ FTE</i>	<i>Towns between Surplus & Adequate (1,201 to 2,400) Pop./ FTE</i>	<i>Towns between Adequate & Shortage (2,401 to 3,599) Pop./ FTE</i>	<i>Towns with Shortage (3,600 or more) Pop./ FTE</i>	<i>Towns with Surplus (1,200 or less) Pop./ FTE</i>	<i>Towns between Surplus & Adequate (1,201 to 2,400) Pop./ FTE</i>	<i>Towns between Adequate & Shortage (2,401 to 3,599) Pop./ FTE</i>	<i>Towns with Shortage (3,600 or more) Pop./ FTE</i>
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I SOUTHWESTERN HEALTH SERVICE AREA

Bridgeport	Darien	Easton
Fairfield	Weston	Monroe
Greenwich		Stratford
New Canaan		Trumbull
Norwalk		
Stamford		
Westport		
Wilton		

II SOUTH CENTRAL HEALTH SERVICE AREA

Derby	Branford	Hamden	Ansonia
New Haven	Guilford	Madison	Bethany
	Meriden	Milford	E. Haven
	Orange	W. Haven	N. Branford
	Wallingford		N. Haven
			Oxford
			Seymour
			Shelton
			Woodbridge

III EASTERN HEALTH SERVICE AREA

Essex	Deep River	Clinton	Ashford
Hampton	E. Haddam	Haddam	Bozrah
Lyme	Middletown	Killingly	Brooklyn
New London	Norwich	Mansfield	Canterbury
Putnam	Old Saybrook	Westbrook	Chaplin
	Pomfret		Chester
	Windham		Colchester
			Columbia
			Coventry
			Cromwell
			Durham
			Eastford
			E. Hampton
			E. Lyme
			Franklin
			Griswold
			Groton
			Killingworth
			Lebanon
			Ledyard
			Lisbon
			Middlefield
			Montville
			N. Stonington
			Old Lyme
			Plainfield
			Portland

III EASTERN HEALTH SERVICE AREA (CONTINUED)

Preston
Salem
Scotland
Sprague
Sterling
Stonington
Thompson
Union
Voluntown
Waterford
Willington
Woodstock

IV NORTH CENTRAL HEALTH SERVICE AREA

Hartford	Avon	Bristol	Andover
	Bloomfield	Burlington	Berlin
	Canton	E. Hartford	Bolton
	Farmington	Newington	E. Granby
	Glastonbury	Somers	E. Windsor
	Manchester	Stafford	Ellington
	New Britain	Wethersfield	Enfield
	Rocky Hill		Granby
	Simsbury		Hartland
	Southington		Hebron
	Vernon		Marlborough
	W. Hartford		Plainville
	Windsor		Plymouth
			S. Windsor
			Suffield
			Tolland
			Windsor Locks

V NORTHWESTERN HEALTH SERVICE AREA

Canaan	Cheshire	Bethel	Barkhamsted
Colebrook	Danbury	Naugatuck	Beacon Falls
Kent	Litchfield	Newtown	Bethlehem
Norfolk	Middlebury	Redding	Bridgewater
Roxbury	New Milford	Thomaston	Brookfield
Salisbury	Ridgefield	Torrington	Cornwall
Sharon	Southbury		Goshen
Washington	Waterbury		Harwinton
	Winchester		Morris
	Woodbury		New Fairfield
			New Hartford
			N. Canaan
			Prospect
			Sherman
			Warren
			Watertown
			Wolcott

*General/ Family Practice, Internal Medicine, Pediatrics, Intern and Resident Primary Care Full-Time Equivalents Included.

APPENDIX B DATA USE GUIDE

In order to most appropriately utilize the distribution findings of this study, the limitations of basing evaluations on numbers alone should first be understood. These limitations are addressed in the Conclusions and Recommendations section of this study. Additional care must be taken in deriving conclusions from the surplus and shortage numbers specified for individual towns. Towns should not be evaluated as isolated units. A surplus or shortage town should be viewed in terms of contiguous towns as well as the individual town.

The town of New London provides a good example. New London data indicates a surplus of 1.1 primary care full-time equivalents. The adjoining towns of Waterford and Groton, however, indicate a shortage of 2.6 and .1 full-time equivalents respectively. This is greater than the surplus in New London. The New London contiguous town area should therefore be considered a shortage rather than a surplus area since shortage exceeds surplus by 1.6 full-time equivalents.

It should also be recognized that the response rate

of 77%, while very high for this type of study, nevertheless required the derivation of 23% of total full-time equivalent results from estimates. The contiguous town evaluation, as suggested above, would tend to reduce the effects of errors of estimate since high estimates in one town would tend to be offset by low estimates in another town. In addition to recognizing that contiguous towns may represent an additional potential primary care supply or demand, the contiguous town method of evaluation would also tend to reduce errors in results. The principles applied to evaluating shortage and surplus data for the New London contiguous town area should be applied to all town and town group evaluations.

Another factor which should be considered in local data analysis is that criteria for shortage, adequate and surplus levels are not absolute. The shortage level should be viewed as somewhere between 3,000 and 3,600 population per full-time equivalent while the adequate midpoint should be viewed as 2,000 to 2,400. The surplus level should be viewed as 1,000 to 1,200 population per full-time equivalent.

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Health, Healing and Rehabilitation

Arthur S. Abramson, M.D.

An assumption is sometimes made that all physicians are outstanding humanists. This assumption rests on a somewhat insecure foundation. It is true that there is a self-selecting process guaranteeing a degree of altruism in most of those who enter the healing professions, including physicians. However, physicians are people and people in their masses vary all along the spectra of personality characteristics. Altruism could range from an impersonal concept all the way to an overriding personal involvement. In addition, there is objective evidence that altruism under the better label of humanism tends to become attenuated during the four years that the future physician spends in medical school. It is a fragile quality of personality, highly vulnerable to environmental influences. I shall tend to concentrate on one major influence on student, physician and patient,—the hospital environment. My experience with this environment has been long and deep as student, physician and patient, an experience that has left me deeply troubled. I shall also speak from my own vantage point as specialist in rehabilitation medicine as this is my field of expertise.

The hospital as an institution has outlived its folkloric reputation as a house of comfort for the healing of the sick and for the graceful and dignified dying of the hopeless. The truth of the matter is that in the past the hospital was not a very effective instrument in the matter of healing of the sick and is not yet a comfortable place to die. A greater fulfillment of the first role has occurred more recently because it became the functioning repository of a vast, new and increasingly complex life-saving technology. For this advance we have had to pay a steep price. It resulted not only in the survival of greater numbers but at the same time in the survival of vast numbers of individuals who

were irretrievably damaged. For example, only 40 years ago the death rate for those sustaining spinal cord injuries was about 80% within the first year. Now, we can say with absolute confidence that more than 80% will be alive at the end of 10 years. And the record keeps improving. This triumph of technology, which I use as a symbol for much more universal accomplishments, has uncovered the price we must pay. It is not enough to have saved the lives of the catastrophically and permanently impaired. Now we are duty bound to make an equal effort to help improve the quality of those lives.

If we are to make the effort, we must begin by taking a searching look at the hospital itself, for it is within this institution that the remarkable advances have occurred. More important, it is from this institution that the disabled must return to a social role. If we define patient care as the social applications of scientific medicine, we would then begin to see the restoration of the impaired individual as a continuing process. There is no other way to look at it since the patient has lived in an environment, became ill in an environment, will be restored in an environment and will return to an environment. The environment is not merely background but is intrinsic to medical care. In one form or another it is a determinant in the maintenance of good health, the prevention of disease, the alleviation of illness, the restoration of the capacity for physical and psycho-social functioning and in the maintenance of gains made in health and function. But we are talking of environments in series, each different from the other, some internal and some external, some good and some bad but, above all, traditionally discontinuous and lacking in the characteristics necessary to an ideal and continuing process of restoration.

Medicine is not responsible for bad housing, inadequate clothing, malnutrition, unemployment, aborted education, deviant recreation and crime. These are social problems which go hand in hand with a higher incidence of poor health and for which society as a whole must bear the onus. Yet this is of the greatest importance in comprehensive health care. For example, just think of returning the individual who had been disabled in that environment back to the same living conditions after having been healed and restored under totally different conditions for an extended period of time. It just doesn't make sense to

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believe that restoration can be maintained. In two unpublished studies, one made by ourselves, it turned out that fully half of those returned to society after having been rehabilitated in first-class centers were not able to maintain their gains. A very large number eventually returned to the sheltering arms of an institution, often of a custodial nature.

It may seem that I am referring to acute and chronic problems of health as separate issues. Even though this is frequently done I am not doing so because it is an error to make that distinction. For too long there has been a lack of interest in and attention paid to the management of the chronically ill. At the very least, there has not been the kind of effort that is poured into the care of the acutely ill. Students tend to be almost exclusively exposed to the drama of the esoteric disease and of the acute incident and they tend to be impressed by this experience. This emphasis seems to carry over to post-graduate training and ultimately into practice. More correctly conceived, acute and chronic illness are a continuum and deserve undiminished, continuing concern and care. With that in mind it should quickly become evident that the human organism has innate biological reserves that could be mobilized in its own behalf by the constructive management process we call 'rehabilitation.' Despite this being a prolonged process, there would be drama enough if only one had the ability to compress time in the mind's eye. That ability is not often learned within the four walls of the hospital, the usual locus for teaching and training. It is lack of that ability which permits patients to be robbed of their executive capacities during prolonged institutionalization whether in acute or chronic disease hospitals or in nursing homes. For those who are in and out of a hospital in 7-10 days in a relatively unimpaired condition this may not be a great problem. It is for this kind of care that hospitals have been designed but this type of design is inappropriate for those less fortunate. The authoritarian atmosphere, the deadly ennui of long nights and week-ends without physical or intellectual activity, the 'we-they' attitude of staff to patient (often an adversary relationship), keeping the patient ill-informed because of the habit of talking over, through and around him, all result in making the human environment atherapeutic at the best and anti-therapeutic at the worst. Most deleterious is the prolonged absence of the individual from his own environment. In our cave-dwelling culture prolonged hospitalization of an individual and the non-fulfillment of unrealistic hopes of uninformed families create a very uncertain place in the home, a vacuum which will not long stay empty of other interests. Small wonder that so many end up in the dead-end atmosphere of custodial institutions.

Because the idea of comprehensive care is now having greater currency, even though often in lip service, and because any modern hospital worthy of its name should have a well-established rehabilitation emphasis, it is now time to change the traditional role which this institution has played. We must start placing its environment and its relationships with the community in a positive therapeutic role. We in rehabilitation began to see this much earlier than many of our colleagues because of the special nature of the work we do. In a sense, we have had to become masters of hindsight because the patient is often referred to us as afterthought and late by which time errors of commission and omission are already very apparent.

I would like to describe some changes we have proposed, some studies we have done and one we are about to do in order to illustrate the thrust of what I have said. They are listed as follows:

- 1) Progressive care
- 2) Milieu therapy
- 3) Day hospital care

These are not all the things that have been done, should be done or will be done but they serve as examples of the restlessness engendered by dissatisfaction with the existing system.

Progressive Care:

Several years ago we were asked to plan for a new 400 bed extended care building as part of our medical center separated from the main teaching hospital. This was in response to a communal need and in line with what was being done elsewhere in a sporadic fashion. The original guidelines given to us would at best have produced another traditional dead-end custodial institution. We were uncomfortable with this notion so the guidelines were discarded and a differently designed building (attached to the hospital incorporating a progressive care program for the unified institution) was proposed.

The concept of progressive care is of current interest but is rarely being implemented in its fullest sense. It defines care in dynamic rather than static terms. The organization of services are dictated by patient need and stage of patient progression and retrogression rather than by diagnostic entities or traditional specialty designations. Thus, a patient would be shifted geographically and programmatically. Progressive or staged phases of care services are incorporated under one roof and under one conceptual framework. It means redesigning the institution both programmatically and architecturally in order to accommodate both the needs of the patient and the convenience of the staff, replacing the almost exclusive emphasis on the latter as is now the practice. The programs would vary all along a spectrum from intensive care to

maintenance within the community. Included would be, among other things, (1) intermediate care for those being decompressed from lengthy stays requiring relearning of basic coping and problem-solving skills, (2) concentrated nursing care for continuing and progressive illness, including those who are terminally ill, (3) custodial domiciliary care for the less independent who are without social resources, and (4) day care for those living in the community who may be so maintained through an organized program of medical and psycho-social therapy to retain basic living skills without which they would deteriorate. Patients having potential for being remotivated would be involved in a program of milieu therapy, an approach found useful in promoting psychological and social recovery in those devastated by long-term mental or physical disabling conditions. Home care, information and counselling services, social advocacy services and a sheltered workshop would find their places under the unifying concept of continuity of care. Utopian perhaps, but these ideas have already been put into practice for the psychiatrically impaired with some success. Why not for the physically impaired? It is time that residents of sequestered dead-end institutions receive more than the leftovers of care and concern. Unfortunately, we are yet to see the implementation of this plan.

Milieu Therapy:

The evolution of the milieu therapy concept of medical care has been largely a history of psychiatric experimentation. Modified to apply to the physically disabled it would have the following characteristic:

"1) For staff, it attempts to enlarge the scope of comprehension of the many psychologic and social factors contributing to effective treatment. For patient, it stimulates greater involvement in his own rehabilitation by providing opportunities for self-generated individual and group activities.

2) It demands that patients involve themselves in group problem-solving and program-planning activities and increases their effectiveness in dealing with a relatively alien environment. Patients must initiate, retain and develop those social skills, which when coupled with increasing functional capability, render them able to cope meaningfully with any environment.

3) Through patient and family education, there is a reduction of alienation created by separation and impairment, thereby retaining the essential human ties to the real world, while temporarily practicing or repairing the skills required to function outside of the hospital.

4) To achieve optimal benefits of physical improvement, deliberate efforts are made to make the hospital

experience congruent and continuous with the anticipated physical, psychological and social demands made upon the patient when he is released from the protective environment of the hospital. The hospital experience must be totally functional, rather than mechanical and routine. It must serve as a transitional phase in the continuum of the patient's life."¹

Based on these criteria we did a controlled experimental study within the rehabilitation service of a large teaching hospital and followed the patients in the community for one year.² The study compared the results of a deliberately established "therapeutic community" management program to those of a good traditional rehabilitation management program. It was difficult to establish this special program and professional help was required. Although the therapeutic community that we finally established was far from ideal, the results tended to support the hypothesis that the human environment of institutional care influences the long-term outcome of rehabilitation management. Comparing experimental and control groups, the findings indicated that social gains eroded with time in both groups, but the erosion was greater and more rapid in controls. This seemed to be a reflection of the environments to which patients returned and of technical inability to obtain greater family involvement. In addition, there was a sharp increase in functional morbidity among control patients in contrast to an increasingly greater degree of functional improvement in the experimental group. Most unexpected was the four time greater death-rate in the control group over time. This occurred even though the experimental group by accident of random selection entered the program in an overall poorer state of health. It may be that health and self-reliance go hand-in-hand but, at this time, this is pure conjecture.³

A similar project was carried out in a custodial, chronic disease hospital. Despite the greater difficulty of developing a therapeutic community among administration, staff and patients, the results were even more positive. Most of the patients involved in the program cast a favorable light on the outcome, and spoke of the way in which they were freed from the emptiness of conventional hospital life.

The Day Hospital:

Disenchanted with the anti-therapeutic effects of in-patient care, we have proposed a Day Hospital Service in Rehabilitation Medicine which has been funded and which is about to begin. Hospital care in the United States has long been increasing in cost at such a rapid rate that all interested parties are seeking some means of mitigating the economic burden while maintaining or (better yet) improving the quality of that care. This proposal endeavors to provide one

type of solution to this problem in a limited but expensive area of medical services. If successful, it may provide a model for other areas of organic medicine. It is a model borrowed from psychiatry as was the model of the therapeutic community.

Glasscote and co-workers (1969) in a study of several day hospital programs for the treatment of mental illness, made the definitive statement of its advantages and disadvantages.

- "1) In most cases, it costs less than in-patient services—in some cases substantially less.
- 2) Allows the patient to maintain those independent activities of which he is capable.
- 3) Discourages the excessive dependency and dehumanization that often develop in the course of full-time hospitalization.
- 4) Allows the patient to remain with his family, when it is therapeutically desirable for him to do so.
- 5) Causes less sexual frustration for the patient, since there is not a prolonged period of forced sexual abstinence.
- 6) Forces the patient to continue to work through any family problems, since he has to return to them every night. In general, denial of problems is more difficult in a day program.
- 7) Forces patients to be more aware of their strengths and abilities, whereas in in-patient programs they can often see only their sickness and failings.
- 9) Reduces the "parent-child, doctor-patient" relationship characteristic of the medical model.
- 10) Capitalizes on the capacities of the subprofessionals and the patients themselves as helping agents.
- 11) Blends readily with non-medical, social and vocational rehabilitation programs.
- 12) Provides a means for tapering off treatment."⁴

There are disadvantages such as the easier dropping-out of patients, problems of transportation, problems of family receptivity, and the more intense and demanding experience for staff, patients and family. We hope to solve these problems by (1) a convenient and efficient method of transportation and by (2) thorough intensive group therapy of patient, family and staff. The day hospital will be closely linked with the in-patient service and the out-patient clinic for greater flexibility.

One Look to the Future:

There are many inherent and seemingly immovable roadblocks in the way of the more comprehensive system of health care towards which we aspire. Radi-

cal changes are required if we are to achieve that goal. For the past 40 years, my very good friend, Doctor Frank Safford, has advocated such radical changes, which seemed to have become less and less utopian with the passage of time. He insisted that well-designed recreational and educational programs, especially adult education, were essential ingredients in the maintenance of good health. He also insisted that these ingredients be organically related in a unified system including an ambulatory care group medical practice. He proposed a specially constructed health campus for a manageable community of approximately 30,000 people backed up by a local infirmary and secondary and tertiary hospitals for larger clusters of communities. In view of the fact that more than 100 billion dollars are being spent for medical care for the Nation's 210 million citizens and much more for the other elements of the proposed unified program, it would seem that an equitable distribution of these resources among a potential 7,000 health campuses may be feasible.⁵ In our largely urbanized society, centralization would be possible, though allowing for some exceptions for more sparsely inhabited rural areas for which a more decentralized system would have to be devised. This would provide the opportunity to create informed and more closely-knit communities better able to understand and manage their own environment and to have greater input into their health care system. The aged, the infirm and the chronically ill, traditional outcasts of our society, should thrive in such an ambience.

After all, our disabled have rights and duties.⁶ It is our task to see that they receive the former and are helped towards performing the latter.

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The General Hospital as a Center for Mental Health Services

David M. Dressler, M.D., and David J. Fitzgibbons, Ph.D.

Abstract—Psychiatric services have been steadily increasing in general hospitals which now see the majority of acutely distressed patients. This trend has been accentuated by the apparent peaking of the community mental health center movement and the availability of third party insurance carriers. The general hospital offers the advantages of being an established base of community health care, equipped to treat medical aspects of psychiatric illness and able to provide services to specialized populations such as the alcoholic, drug toxic, and psychosomatic patient. With the probable advent of National Health Insurance, services will be fiscally viable on a fee for service basis.

At the present time health care delivery appears to be moving towards a pluralistic system in which multiple sites will be interrelated by defined planning structures (PL 93-641). In psychiatry, these include: The state hospital, the mental health center, the private psychiatric hospital, and the community (general) hospital. Important issues include questions about what services should be included, how much will they cost, where they will be located, and who shall provide them. Underlying these more concrete issues are global questions such as should the individual doctor-patient relationship be maintained or should the patient be treated by a multidisciplinary team of specialized experts operating under an institutional umbrella. These are reflective of underlying differences in opinion about the etiology and pathogenesis of mental illness—i.e., psychosocial vs. biogenetic.

This paper presents a rationale for the general hospital as the primary facility treating mentally disturbed persons. To illustrate the advantages of this institutional model, experiences of a newly instituted psychiatric service in a general hospital are described, emphasizing changes in patient care within the hospital and patterns of service delivery within the community.

Historical Background

It has only been in the past 20 years that the general hospital has assumed a significant role in the delivery of mental health services. The impetus to utilize general hospitals was largely stimulated by Hill-Burton construction funds during the early 1950's. General hospital services were also encouraged by more comprehensive private health insurance and the introduction of Medicare and Medicaid. The widespread introduction of psychotropic drugs permitted rapid and effective treatment of acutely disturbed persons without requiring custodial confinement. As an outgrowth of the Joint Commission Report of 1961 and the 1963 Mental Health Center's Act, many more general hospitals became involved in mental health services. It has been estimated that by 1970 more than 50% of federally funded centers included a general hospital. In a few instances, such as at the Denver General Hospital, the entire mental health program was conducted by that institution.¹

According to a recent survey of the American Hospital Association,² more than 84% of all general hospitals reported having inpatient psychiatric facilities, 65% reported outpatient mental health facilities, 10% reported partial hospitalization programs, and 81% reported emergency services. A comparison of these figures with those obtained five years ago indicates a rapid growth of mental health facilities in general hospitals. In fact, it is estimated that the number of persons now admitted to general hospitals approximates the number admitted to public and private mental hospitals.³

There are many logical arguments for considering the general hospital as the primary institutional facility for the delivery of mental health services. It is an established base for health care delivery in the community, and in many communities is the only available facility; in most communities the public looks to the general hospital as a major health resource. This is especially true for persons in acute distress as reflected by the increasing number of patient visits to hospital emergency rooms. As a result of its community status, the general hospital is often viewed with less stigma than a mental hospital; mental illness is often viewed as having certain parallels to physical illness and there is greater hope of successful treatment. Treatment in a general hospital usually means remaining in the community rather than being sent away to a distant facility. Those treated include not

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only identified psychiatric patients but also those with concurrent medical-psychiatric disturbances and those with psychological stress reactions to organic illness. The general hospital also provides opportunities for treating populations otherwise not well served such as toxic psychoses, chronic brain syndromes, and psychosomatic disturbances. Through the psychiatric liaison service other physicians and nurses can be trained to become more aware of psychosocial aspects of medical illness which may benefit not only the hospitalized patient but also the patient seen in the doctor's office. Finally, the general hospital provides a potential research base for biological-genetic studies concerning the etiology and pathogenesis of mental illness.

The Development of the Psychiatric Service

The New Britain General Hospital (NBGH) is a 400-bed facility located in the City of New Britain, Connecticut. The hospital serves a regional population of approximately 150,000 people who seek their health care from local practitioners which include a variety of specialists. Most community residents are employed by local industries, many of which provide comprehensive health insurance plans. The hospital has full-time chiefs in all the major clinical subspecialties, a "house" staff, and is a teaching affiliate of the University of Connecticut Health Center. The hospital receives its patients not only from local physicians but also from smaller community hospitals in the area and, in turn, refers problems requiring specialized treatment to larger hospitals in nearby Hartford, Connecticut. In many respects, the hospital and the community which it serves seem to be typical of many hospital-community relations throughout the country.

For many years psychiatrists practicing in the community admitted patients to a 27-bed ward which was organized in a manner similar to other nursing care units in the hospital. The treatment plan was implemented almost entirely by the individual psychiatrist who either followed the patient upon discharge or referred the patient to an administratively autonomous mental health clinic located adjacent to the hospital. Acutely disturbed patients were transferred either to the State Hospital or to a private psychiatric hospital.

In October, 1973, the hospital hired its first full-time chief of psychiatry to create and develop a clinical department of psychiatry. Within the next six months the inpatient unit was converted into a modified therapeutic community, utilizing individual, family, and group treatment modalities in addition to psychotropic drugs; treatment plans were implemented by teams of non-medical mental health professionals working with the attending psychiatrists. The Mental Health Clinic reorganized its services in order

to provide specialized programs for specific population groups such as the chronic schizophrenic, the adolescent, the recently divorced, etc.; specific treatment modalities were selected on the basis of the presenting problem and the therapeutic goal. Contractual agreements with other agencies were strengthened in order to increase community participation. One example was the state hospital follow-up program which was conducted in collaboration with the State Hospital, the Visiting Nurse Association, and two family service agencies. A day treatment program was instituted to provide care for patients discharged from the inpatient unit as well as for those patients having marginal functioning on an outpatient basis. Twenty-four hour psychiatric coverage of the Emergency Room was supplemented by additional staff to provide crisis intervention, and consultation-liaison services for the non-psychiatric hospitalized patients were expanded. In addition, negotiations with the regional state hospital resulted in a coherent plan for admission and subsequent outpatient follow-up of patients referred to that facility; a nurse clinician was hired to provide liaison between the two facilities. Arrangements were made with the University of Connecticut to provide training for psychiatric residents, medical students, social work students, and nursing students, and an active in-service training program was begun.

Personnel for these programs was in part made possible by a federally funded staffing grant to The Wheeler Affiliates, a consortium of two general hospitals and two child care facilities serving the Central Connecticut region. The NBGH was responsible to provide treatment services for adult patients in the New Britain area. Funding also permitted regionalization of services through outreach to specialized populations, such as the alcoholic and Spanish speaking patients, by detaching some staff from an institutional base of operation.

Impact on Patient Care and Service Delivery

Although the overall impact of this new departmental structure cannot be evaluated at this time, after one year certain changes have already occurred with respect to patient care services at the hospital and the community system of mental health care. Psychiatric inpatient beds have been actively utilized (582 admissions) and remain almost fully occupied (93.5%); the previous practice of boarding medical-surgical patients has, therefore, been discontinued. Although the average number of patient days has slightly increased from 12.5 to 14.5 as a result of program changes, the number of readmissions has significantly decreased (less than 5%). The day treatment program has permitted earlier hospital discharges in selected cases and occasionally prevented readmissions. The

mental health clinic has been able to more rapidly respond to discharges from both units as a result of its reorganization. The improved quality and continuity of care has also led to a reduction of referrals to the State Hospital (approximately 4%) and private psychiatric hospitals; these cases primarily represent a specialized population of patients with persistent psychotic symptoms.

At the hospital services have been developed for the inpatient detoxification and psychosocial treatment and outpatient follow-up of alcoholic patients. An interdisciplinary program with the departments of nursing, social service, and pastoral care has been developed to assist attending physicians in the care of the dying patient and his family. In conjunction with the Department of Medicine, a therapy group for medical patients with history of recent myocardial infarction has been instituted.

Within the community the hospital has performed a major role in coordinating certain patient care services. Essentially all psychiatric emergencies are either handled by a hospital supported telephone answering service or in the emergency room. One result has been the beginning development of a comprehensive network of community agencies, each working with specific case populations triaged to them by the hospital emergency room.

Finally, and not insignificantly, the Department of Psychiatry will become financially self-supporting in its second year of operation, with income generated from inpatient and day treatment services off-setting costs to the mental health clinic. The two percent deficit to the hospital will be covered by the expansion of a newly instituted fee-for-service outreach program. The sources of income to support a budget of slightly over one million dollars are shown in Table 1.

Table 1

INCOME FOR NBGH DEPARTMENT OF PSYCHIATRY (FISCAL 1974)	
Source	Percent of Total Income
Federal staffing grant	14.0
State staffing grant	5.0
Receipts from services (Medicare and Medicaid, private insurance, patient fees)	79.0
Hospital (deficit)	2.0
	100.0

Comment

Within a relatively short period of time a department of psychiatry has been developed at a community hospital and has already had a significant impact on

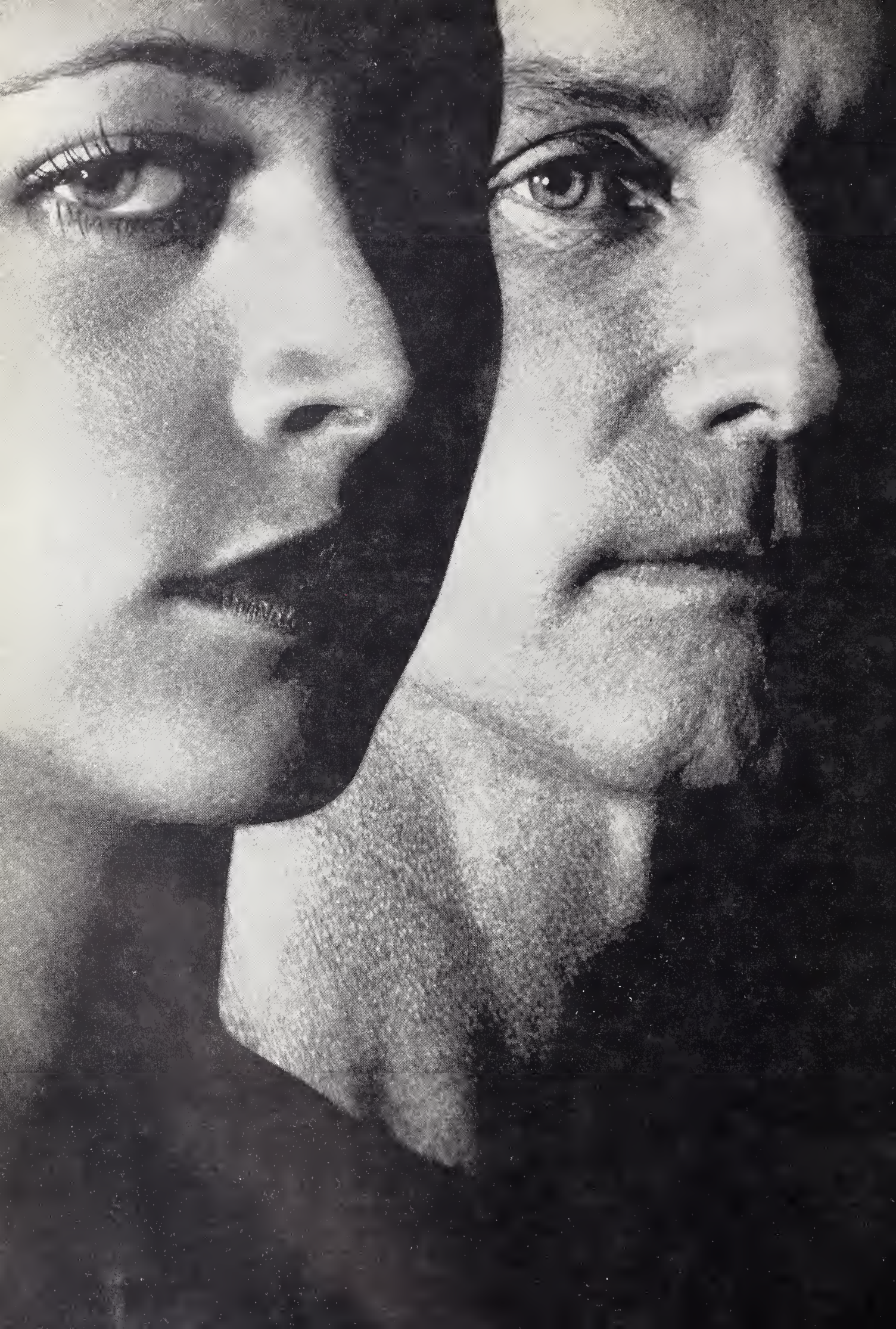
patient care at the hospital and the pattern of mental health service delivery in the community. The availability of a comprehensive service system at the hospital, integrated with other programs in the community, has resulted in a continuum of services such that relatively few persons need treatment outside of the community, a goal espoused by health care planners.⁴ Those that are referred elsewhere usually require longer term institutional care; this will hopefully enable the state and private psychiatric hospitals to develop more specialized programs.⁵

The availability of third party coverage, whether by private carrier, state or federal programs, supplemented by fee for service, has made psychiatric treatment in a general hospital economically feasible.⁶ It has been pointed out that the economics of this type of system are, in fact, cheaper than that at a state facility when one considers the total range of services required.⁷

Locating a mental health service within a medical care delivery system has highlighted the historical origins of psychiatry as a medical specialty.⁸ The inclusion of psychiatry among the other clinical services at the hospital has verified this fact and is consistent with current trends in role definition of psychiatrists.⁹ The identification of psychiatry with other medical care services will increase its potential participation in the health care systems of the future. If, as now appears probable, National Health Insurance is to be the future funding source of health care delivery, then the program established here is already designed to participate within this structure.

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Testing in Humans: Who, Where & When.

the weight of ethical opinion:

Few would disagree that the effectiveness and safety of any therapeutic agent or device must be determined through clinical research.

But now the *practice* of clinical research is under appraisal by Congress, the press and the general public. Who shall administer it? On whom are the products to be tested? Under what circumstances? And how shall results be evaluated and utilized?

The Pharmaceutical Manufacturers Association represents firms that are significantly engaged in the discovery and development of new medicines, medical devices and diagnostic products. Clinical research is essential to their efforts. Consequently, PMA formulated positions which it submitted on July 11, 1975, to the Subcommittee on Health of the Senate Labor and Public Welfare Committee, as its official policy recommendations. Here are the essentials of PMA's current thinking in this vital area.

1. PMA supports the mandate and mission of the National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research and offers to establish a special committee composed of experts of appropriate disciplines familiar with the industry's research methodology to volunteer its service to the Commission.

2. PMA supports the formation of an independent, expert, broadly based and representative panel to assess the current state of drug innovation and the impact upon it of existing laws, regulations and procedures.

3. When FDA proposes regulations, it should prepare and publish in the *Federal Register* a detailed statement assessing the impact of those regulations on drug and device innovation.

4. PMA proposes that an appropriately qualified medical organization be encouraged to undertake a comprehensive study of the optimum roles and responsibilities of the sponsor and physician when company-sponsored clinical research is performed by independent clinical investigators.

5. PMA recognizes that the physician-investigator has, and should have, the ultimate responsibility for deciding the substance and form of the informed consent to be obtained. However, PMA recommends that the sponsor of the experiment aid the investigator in discharging this important responsibility by providing (1) a document detailing the investigator's responsibilities under FDA regulations with regard to patient consent, and (2) a written description of the relevant facts about the investigational item to be studied, in comprehensible lay language.

6. In the case of children, the sponsor must require that informed consent be obtained from a legally appropriate representative of the participant. Voluntary consent of an older child, who may be capable of understanding, in addition to that of a parent, guardian or other legally responsible person, is advisable. Safety of the drug or device shall have been assessed in adult populations prior to use in children.

7. PMA endorses the general principle that, in the case of the mentally infirm, consent should be sought from both an understanding subject and from a parent or guardian, or in their absence, another legally responsible person.

8. Pharmaceutical manufacturers sponsoring investigations in prisons must take all reasonable care to assure that the facilities and personnel used in the conduct of the investigations are suitable for the protection of participants, and for the avoidance of coercion, with a respect for basic humanitarian principles.

9. Sponsors intending to conduct non-therapeutic clinical trials through the participation of employee volunteers should expand the membership and scope of its existing Medical Research Committee, or establish such an internal Medical Research Committee, with responsibility to approve the consent forms of all volunteers, designs, protocols and the scope of the trial. The Committee should also bear responsibility to ensure full compliance with all procedures intended to protect employee volunteers' rights.

10. Where the sponsor obtains medical information or data on individuals, it shall be accorded the same confidential

status as provided in codes of ethics governing health care professionals.

11. PMA and its member firms accept responsibility to aid and encourage appropriate follow-up of human subjects who have received investigational products that cause latent toxicity in animals or, during their use in clinical investigation, are found to cause unexpected and serious adverse effects.

12. PMA supports the exploration and development by its member companies of more systematic surveillance procedures for newly marketed products.

13. When a pharmaceutical manufacturer concludes, on the basis of early clinical trials of a basic new agent, that a new drug application is likely to be submitted, a proposed development plan accompanied by a summary of existing data, would be submitted to the FDA. Following a review of this submission, the FDA, and its Advisory Committee where appropriate, would meet with the sponsor to discuss the development plan. No *formal* FDA approval should be required at this stage. Rather, the emphasis should be on identification of potential problems and questions for the sponsor's further study and resolution as the program develops.

The PMA believes that health professionals as well as the public at large should be made aware of these 13 points in its Policy on Clinical Research. For these recommendations envisage constructive, cooperative action by industry, research institutions, the health professions and government to encourage creative and workable responses to issues involved in the clinical investigation of new products.



Pharmaceutical Manufacturers Association
1155 Fifteenth Street, N.W.
Washington, D. C. 20005

Laboratory Notes

PLASMA RENIN

This is one of our newly available RIA (radio-immunoassay) tests, useful in the investigation of hypertension.

Normal Values

Plasma renin is influenced by age, time of day, posture, activity, salt intake and medication. Our calculated range of normals based on the usual laboratory patient is 0.52-3.78 mg/dl/hr for the central 80% of persons and compares closely to the published range for the reagent. (39 healthy persons, age 20 to 60, men and women, usual salt intake, no medication, mostly fasting, drawn after an average of 1½ hours of ambulation).

Peripheral Blood

Renin is one parameter in classifying hypertension into potentially curable secondary types and in predicting the outcome of essential hypertension.^{1,2} Low values, with hypokalemia, are found in excessive mineralocorticoid secretion by the adrenal.

Renal Vein

In suspected renal artery stenosis samples are drawn from both renal veins. When renin activity on the involved side is elevated and at least 1.5 times that on the uninvolved side the probability of improvement in blood pressure after appropriate surgery is about 90%.³

H. Truax, M.D.

REFERENCES

1. Laragh J; et al; Am J Med 52,633, 1972
2. Oparil S: Radioassay, Clinical Concepts, E.B. Searle & Co., 1974
3. Schambelen M; et al; NEJ Med 290, 1153, 1974

Data Sheet

Several office assistants have asked for the appended data sheet to use when receiving phoned reports. Feel free to photocopy.

Pap Smears—Interpretation

Because we are now giving more description on Pap smear reports we would like to add the following general discussion.

Endocervical Cells

Benign endocervical cells are commonly found in Pap smears. Although their absence was once thought to imply an inadequate sampling of the squamo-columnar junction, an expert panel¹ recently concluded that this is not true, and a perfectly ade-

quate sample may be free of endocervical cells. Because this opinion is still controversial we do report the *absence* of such cells.

Endometrial Cells

These are normally found in Pap smears of *premenopausal* women for 2-3 days after the menses and may be present up to the 10th day of the cycle. IUDs may cause shedding of these cells up to the 13th day and hormonal medication may cause shedding at any time.

In *postmenopausal* patients endometrial cells are always considered abnormal even if their presence results from hormonal medication. Unfortunately their morphology in Pap smears is seldom well enough preserved to permit distinction of benign and atypical endometrial cells. Therefore we usually suggest a curettage or jet wash biopsy sample.

REFERENCES

1. A J Clin Path 61, 285, 1974

I. M. Weisbrot, M.D.

Phosphates and Hyperalimentation

Serum phosphorus deficiencies of considerable magnitude may occur during parental hyperalimentation. Such deficiency should be detected and prevented because of possible noxious effects on white blood cells and red blood cell function.^{1,2}

REFERENCES

1. Craddock PR; et al; NEJ MED 290, 1403, 1974
2. Lichtman MA; NEJ Med. 290, 1432, 1974

Joint Fluid

Laboratory analyses of abnormal collections of joint fluid are often useful diagnostically. Our present routine, worked out with members of the Rheumatology section, includes the following:

1. Description
2. Viscosity
3. "Mucin clot"
4. Crystals, presence and type
5. Cell count
6. Differential: % PMN and % non PMN

Additional tests which are available on request include:

- *7. Protein content
- *8. Immunoglobulins, IgG, IgM, LgA
- *9. Glucose
10. Complement C3

ROY N. BARNETT, M.D., Editor, *Laboratory Bulletin*, Norwalk Hospital.

11. R A titre
12. Cultures for bacteria, fungi or mycobacteria

*Starred tests require a simultaneous blood sample for proper interpretation. Specimens should be sent to Microbiology.

Consultation with the Clinical Pathologist duty may be useful in ordering and interpreting these tests.

A. C. Noto, M.D.

More on GGTP

This enzyme, discussed in the Bulletin of May 1974, has found its main use in discriminating between alkaline phosphatase elevations due to liver disease and elevations due to bone diseases. A normal GGTP (less than 38 IU), excludes liver disease with a high degree of certainty.

An additional use originally described by Rosalki¹ is for the detection of minimal liver damage due to alcohol consumption; it is much more sensitive than GOT or other liver function tests for this purpose.

REFERENCES

1. Am J Clin Path 62, 579, Oct. 1974

Resistant H. Influenza

Formerly thought to be universally sensitive to ampicillin, a few strains of resistant Hemophilus influenzae type B have recently been isolated in Conn. We are prepared to test "H. flu" isolates for ampicillin sensitivity using a disc diffusion technique, controlled against a known resistant strain obtained from CDC. Strains resistant to ampicillin so far are all sensitive to chloramphenicol.

A. C. Noto, M.D.

BUN—Creatinine Ratio

If one or both of these substances is elevated in the blood, it is useful to do a quick mental calculation of their ratio.¹

1. Usual BUN/Cr = 10/1 to about 20/1; ordinary renal failure.
2. High BUN/Cr over 20/1;
 - a. Obstruction of urinary tract (BUN) absorbed in tubules, Cr is not)
 - b. Prerenal azotemia (BUN not cleared)

- c. GI bleeding (excess absorption)
 - d. Excess protein from diet or tissue destruction, kidneys inadequate
3. Low BUN/Cr, below 10/1:
 - a. Repeated hemodialysis
 - b. Low protein diet in renal failure
 - c. Hepatic insufficiency (very rare)

REFERENCES

1. Gambino, Columbia-Presbyterian Lab. Newsletter, May 1971

Enterobacteriaceae Biotypes

We have recently added 15 more biochemical tests in the identification of common Gram negative rods. Because of the clever device used this does not add an equivalent amount of extra work.

The "biotype" is indicated by the 7 digit number on the report sheet. If repeat cultures have the same organism and same number they are almost always persistent organisms; new numbers indicate a different organism and a new infection.

A. C. Noto, M.D.

Handling Tissues

What to do if you have a tissue specimen and no formalin?

1. If you can get to the lab within 24 hours or so put the sample in gauze or cloth moistened with water; refrigerate.

2. If you can't get to the lab or don't have access to refrigeration put it in alcohol, 70% ethanol is best; 95% ethanol, or isopropyl work quite well.

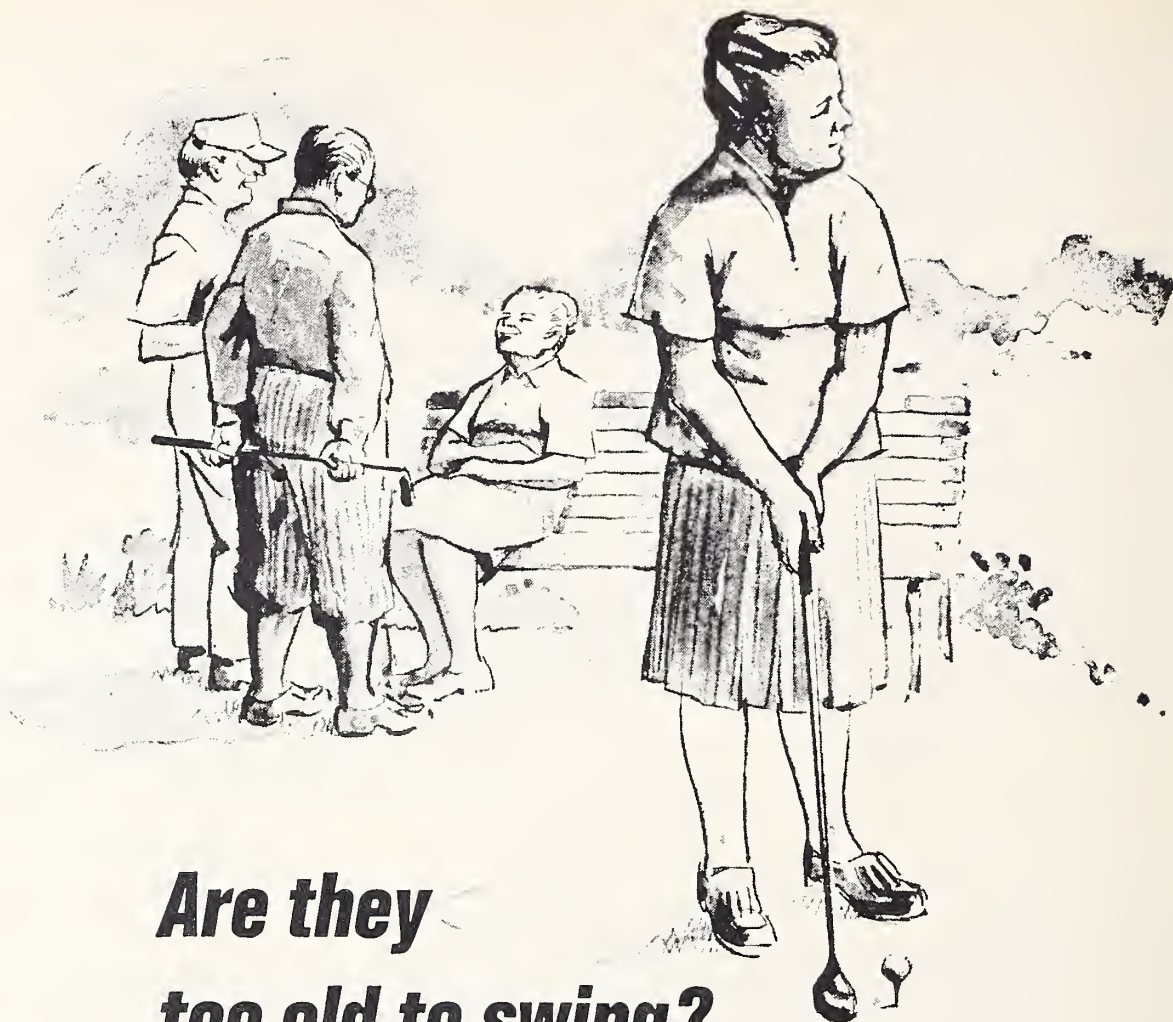
3. *Don't put it in saline.* For some reason this ruins tissue for sectioning in a relatively short time.

Small bottles with buffered 10% are always available in the lab.

Stool Specimens

Barium interferes with exam for ova and parasites for about 10 days. Satisfactory specimens should be fresh, of adequate quantity and free of barium or mineral oil. Proper procedure is exam at 3 day intervals x 3.

A. C. Noto, M.D.



Are they too old to swing?

EACH TESTAND-B TABLET CONTAINS:

Ethinyl Estradiol	0.005 mg.
Methyltestosterone	1.25 mg.
L-lysine	100 mg.
Nicotinic Acid	12.5 mg.
Ferrous Iron	2.82 mg.
Vitamin A	2,500 U. S. P. Units
Vitamin D	250 U. S. P. Units
Thiamine Mononitrate	2.5 mg.
Riboflavin	2.5 mg.
Ascorbic Acid	25.0 mg.
Folic Acid	0.1 mg.
Vitamin B-12	1.5 mcg.
Methionine	12 mg.
Choline Bitartrate	15 mg.
Inositol	10 mg.
Calcium Pantothenate	2.5 mg.
Pyridoxine	0.25 mg.
Copper (from Copper Sulfate)	0.25 mg.
Zinc (from Zinc Oxide)	0.25 mg.
Iodine (from Potassium Iodide)	0.075 mg.
Calcium (from Dicalcium Phosphate) ..	72.5 mg.
Phosphorus (from Dicalcium Phosphate) ..	55 mg.
Potassium (from Potassium Sulfate) ..	2.5 mg.
Manganese (from Manganese Sulfate) ..	0.5 mg.
Magnesium (from Magnesium Sulfate) ..	0.5 mg.

As the "middle years" exact their metabolic toll, complaints are vague, but therapy can be specific.

Testand-B, as an anabolic stimulant in male and female climacteric, senile vaginitis, decreased muscle tone, protein depletion states, osteoporosis and loss of body mass, helps compensate for the metabolic changes of aging. The androgen/estrogen combination, plus the comprehensive nutritional complex provided by Testand-B helps patients feel better physically and emotionally.

ACTION AND USES—DOSAGE: 1 tablet after breakfast and supper, or as required. In females, 3-week courses of therapy are recommended followed by a 1-week rest period. Withdrawal bleeding may occur during the rest period. **PRECAUTIONS:** Administer cautiously to female patients who tend to develop excessive hair growth or other signs of masculinization. **CONTRAINDICATIONS:** Patients in whom estrogen or androgen therapy should not be used, as in carcinoma of the breast, genital tract, or prostate, and in patients with a familial tendency to these types of malignancy. **AVAILABLE:** Bottles of 30, 100, and 500 tablets. Rx only.

TESTAND-B INJECTABLE: Vials of 10 cc.

Testand-B tablets

A hormonal, nutritional supplement

Geriatric Pharmaceutical Corp.
Box 68, Floral Park, New York 11001
Pioneers in Geriatric Research



The Doctor's Guide to Home Care Through Participating Hospitals and Connecticut Blue Cross

Programs elsewhere have demonstrated the value of home care. The patient, in properly selected cases, had the psychological advantages of his home environment which enhanced his progress. The programs proved there could be financial savings on an individual case basis, because of earlier discharge of the patient and the lower cost of home care. It also indicated the possibility of a more effective use of existing hospital beds through earlier discharge of patients, thereby lessening the pressures for expanding hospital facilities.

The Home Care Program Has 5 Primary Objectives

(1) To provide extension of hospital services into the home for patients who can be discharged earlier than would otherwise be possible. (2) To provide the psychological and rehabilitative stimuli for the patient's earlier recovery or maximum rehabilitation in his home and family surroundings. (3) To provide services for the patient with terminal illness so that he may remain with his family as long as medically feasible. (4) To make hospital beds available for other patients who need to be hospitalized. (5) To reduce the cost of hospital care.

Case Selection

Cases most likely to prove suitable for home care can be selected from a wide cross-section of diagnoses and age groups including post-surgery, post-fracture, recovering coronary, strokes, selected chronic disease patients and other types of cases in which hospital care can be replaced by home care.

Criteria For Home Care Programs

Blue Cross benefits for Home Care can be provided only in conjunction with approved hospitals and state licensed, Medicare certified Home Health Agencies.

An acceptable program must:

1. Be centrally administered by a hospital.
2. Supply physician-directed medical, nursing, social and related services to selected patients in the home through coordinated planning, evaluation and follow-up procedures.
3. Maintain the doctor-patient relationship by continuing care under direction of the physician responsible for the patient's hospitalization, or when necessary, some other physician selected by him.
4. Provide medical, nursing, social service, dietary and physical therapy services, as well as such other services as occupational therapy, speech therapy, and home health aide.

5. Be closely integrated with the hospital, with acceptance of responsibility by the hospital and its medical staff, including readmission of the patient to the hospital when and if necessary.
6. Provide a nurse coordinator to act as liaison between the doctor, the hospital and the Home Health Agency.
7. Provide a means to insure appropriate medical selection in cases discharged to home care.
8. Determine that the home environment is adequate for the patient's needs before discharge to home care.
9. Determine that home care is acceptable to the patient and family.

Blue Cross Home Care Eligibility Requirements

The patient must:

1. In the physician's judgment, need skilled nursing care on a part-time basis, be essentially home bound and agree in writing.
2. Have a home environment meeting his needs with such care acceptable to patient and family.
3. Be hospitalized in a Blue Cross participating hospital which has agreed to participate in the Home Care Program.
4. Have Blue Cross coverage for necessary hospital care and have hospital days remaining to his credit.
5. Be able to be discharged from the hospital earlier than would otherwise be possible.
6. Be referred to the Home Health Agency before discharge from the hospital.
7. Reside in an area served by a Blue Cross approved Home Care Program.

Home Care Days Available

The patient will be entitled to Home Care at the rate of three home care days for each remaining hospital day of credit available under his contract. Home care will not be deducted from his remaining hospital care benefits.

Basic Home Care Benefits

1. Nursing Care

Nursing visits by a licensed nurse as often as medically necessary. Home nursing visits will include definitive nursing care (baths, enemas, dressings, treatments) and rehabilitative nursing

care (assisting with range of motion exercises, teaching self-administration of insulin, guidance in use of crutches or walker, etc.).

2. Hospital Provided Services

All laboratory tests, X-ray, EKG, inhalation therapy, oxygen and diagnostic tests, medicines and dressings prescribed for, and necessary for treatment of the condition for which the patient was hospitalized but not drugs or supplies for other, unrelated conditions. All services and supplies, to be covered by Connecticut Blue Cross, must be procured through the hospital from which the patient was discharged or any of the other hospitals approved for participation in the program.

3. Paramedical Services

- a. Social Service Guidance
- b. Dietary Guidance
- c. Physical Therapy
- d. Occupational Therapy
- e. Speech Therapy

4. Home Health Aide Service

Blue Cross benefits cover one-half the cost of part-time home health aide service. The primary function of the home health aide may include helping the patient in and out of bed, bathing, exercising and retraining the patient in self-help skills. This service is intended for patients whose families are not able to perform these services for them. The home care nurse will determine whether home health aide service is necessary and can be supplied by trained aides furnished and supervised through the Home Health Agency.

Limitation of Benefits

Blue Cross of Connecticut reserves the right to terminate Home Care benefits for any case when coordinated home care no longer seems necessary. However, this will not be done until a conference has been held between the Blue Cross and hospital home care coordinator.

Services Not Covered

The program will provide hospital-type services only. It will not attempt to provide professional medical services, and the physician's fees remain the patient's responsibility.

At this time non-covered services include transportation and rental of wheel chairs, hospital beds, iron lungs, oxygen tents or similar hospital equipment. However, if the patient's financial situation warrants it, the Home Health Agency may provide or arrange for use of such equipment, if available, through the Agency or other community resources.

Physician's Role

The physician determines which of his patients is suitable for home care. If the program is to succeed, the physician must take the initiative in discharging patients to home care and provide all necessary medical attention to the patient while on home care.

The patient must be referred for home care BEFORE discharge from the hospital.

The following is a general sequence of steps to be taken in providing home care for Blue Cross patients:

1. Physician determines that the patient's condition is suitable for continuing care in the home, and that home care will result in a saving of hospital bed-patient days.
2. Physician discusses possibilities of home care with the patient and his family and is certain of their acceptance.
3. Physician instructs the nurse coordinator or the head nurse to initiate Home Care Department referral form.
4. Physician completes referral form, giving the patient's final diagnosis (if multiple, please list), medications and orders for coordinated home care. Physician indicates his best estimate of the minimum number of hospital days saved.
5. Physician writes orders for discharge drugs and central supplies necessary for the continuing care of the condition for which the patient was hospitalized. These should not exceed a two week's supply, but may be renewed as long as the patient remains on the Home Care Program.
6. Patient is taken to his home (he or his family arranges transportation) and home care is instituted.
7. The Home Health Agency provides services ordered by the physician and reports to him at regular intervals.
8. Prescriptions for drugs, medicines and dressings, and orders for laboratory services, necessary for the home care of the patient, must be filled through the hospital from which the patient is discharged, or one of the hospitals which participated in the Blue Cross Home Care Program.
9. Initially, home care is approved for a thirty day period, subject to maximum home care benefit days available.
10. For each subsequent 30 days of medically necessary home care, a recertification request is submitted by the Home Care Department following consultation with the patient's physician.

For further information or answers to any questions contact: Connecticut Blue Cross, Inc., 370 Bassett Road, North Haven, CT 06473, Tel.: (203) 239-4931.

Reflections from the Dean's Office

Robert U. Massey, M.D.

"Crises, after all, are of the essence of progress, and, even if progress itself is a sort of *folie circulaire*, as may sometimes be suspected, it goes forward to meet its other end by a succession of crises, encountered and overcome, or bypassed."¹

Joseph Garland, M.D., Editor of the *New England Journal of Medicine* from 1947-1967, had in mind the crisis of the printed word when he wrote that paragraph. He was expressing the concern of many of us that "non-print materials," might supersede books and scientific journals as the customary source of learning and new information. He had confidence, he added, that we need not fear a "Worterdammerung"—as has been suggested, especially so long as a journal retains its invaluable capacity of staying quiet until one is ready to consult it, and is then on hand with its original content unchanged; which cannot be said about television."²

Crisis, the same word in both Latin and Greek, meant in those languages discrimination or decision. It was probably used first in English as a clinical term. The Oxford Dictionary cites Traheron in 1543: "*Crisis* signifieth iudgemente, and in thys case it is vsed for a sodayne chaunge in a disease."

Obviously a crisis is a time for decision, a time of danger, a "point in time" whose next direction is uncertain. There is said to be a crisis in health care; medical education, along with all of higher education, faces a crisis; there is a crisis in biomedical research. If these crises are upon us, then a "sodayne chaunge" is likely and we need to be wary and to be ready.

Legislators hammer away at our medical institutions; journalists, lawyers, social planners, and other observers of the contemporary scene find medicine and the organization of medical care worthy of attention and of attack. That hammering is the sound of crisis. It will not go away, and we shall be compelled to respond. The blows are more than a tentative knocking at the door.

Recently a legislator, certain that the University of Connecticut Health Center was failing to respond to

public need or public want, posed a series of over 100 questions on 20 themes, ranging from "How many instruments are lost each year," to "Do you have pharmacology professors and what do they teach." The answers, detailed accurate, and covering many pages and taking many hours to prepare, were held to be unsatisfactory and misleading.

As in most inquiries, the answers were unsatisfactory, because the questions were the wrong questions. Our political masters, and the public whom they serve, have been asking wrong questions about medicine and science, and coming up with wrong answers for some time. Those wrong answers get translated into bad law.

We in medicine need to restate the questions, to define the crisis. Recently at the annual clinical meetings in Atlantic City, there were many papers reporting efforts to ask the right questions about clinical judgment, competence, outcomes, quality, patient satisfaction, and costs. When the questions were framed in the proper way, the answers were not hard to find. Many of the questions were the ones the public and their legislators had been trying to ask all along.

In the populist movement of the 70's, not only are words in danger, as Dr. Garland suggested, and illiteracy more common than we imagine, but medicine and medical education could be destroyed in a babble of public debate and patchwork laws. Because words have lost their meanings and questions are posed that are meaningless, the laws that are written and the judgments that are made can be mischievous.

Crisis is discrimination; as physicians we should be able to define what is being asked of us, admit that there are grounds for the questions, reframe them, make the critical observations, and say to the public and the legislators, "Isn't this what you were asking?—if it is, these seem to be some answers, and here is what we might consider doing."

Our patients would listen, and so would the politicians.

REFERENCES

1. Garland Joseph: *A Time for Remembering*. The Massachusetts Medical Society, 1972.
2. Ibid.

ROBERT U. MASSEY, M.D., Dean and Professor of Medicine
University of Connecticut, School of Medicine, Farmington.

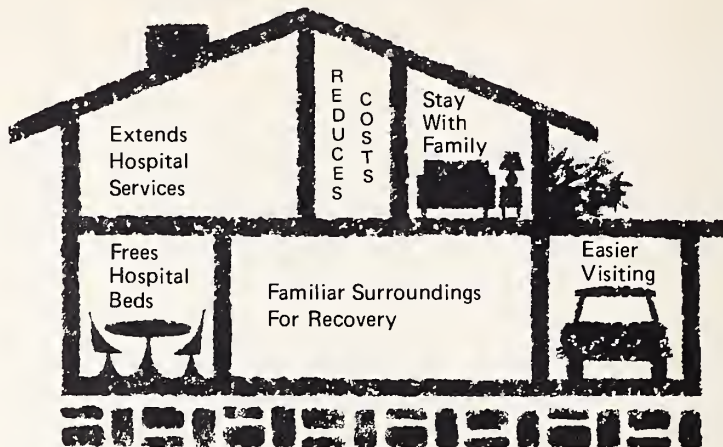
New Hospital In Town?

Not really, but with the
**CONNECTICUT BLUE CROSS
HOME CARE PROGRAM**
certain treatment and care
can be transferred to the home.

IT'S UP TO THE DOCTOR

The physician and the hospital home
care coordinator determine which
patients are candidates for home care.

The success of the program relates directly
to the physician's decision to discharge
his patient to Home Care and
continue medical attention at home.



Blue Cross
of Connecticut

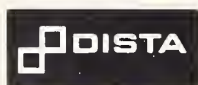
For more information:
Home Care Coordinator
Blue Cross of Connecticut
370 Bassett Road
North Haven, Conn. 06473
Phone: 239-4911

New from Lilly/Dista Research

NALFON[®]

fenoprofen calcium

300-mg.* Pulvules[®]



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*Additional information available to the profession
on request.*

*Present as 345.9 mg. of the calcium salt of fenoprofen dihydrate
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EDITORIALS

The Primary Physician in Connecticut

The summary of findings and recommendations of the study of primary physicians in Connecticut, appearing in this supplementary issue of *Connecticut Medicine*, represents a great credit to the physicians who participated in it and to the Commission on Hospitals and Health Care which stimulated it. More than 75% of the primary physicians in the State responded to a rather lengthy questionnaire. This high response rate is a tribute to these busy physicians and should be recognized. The Commission on Hospitals and Health Care, unlike many public agencies in the country, has sought to get the data necessary for planning and decision making through undertaking this study. The formation of a task force to achieve this end is a most commendable and welcome forward step.

The findings of this study are most enlightening, but they must be interpreted in the context of the limitations of a manpower study. The methodology and findings detailed in the complete report, and not included in this summary, represent a real advance in manpower studies and a more refined view of the characteristics and distribution of primary physicians than is available in literature reports from nine other states which have undertaken similar studies. It nonetheless has several important limitations which, if not recognized, would take the impetuous planner or politician down an unhappy path: First, whereas the study attributes *actual* hours of primary care to the town where it is generated by the office or hospital based physician (a great advance), it does not speak to the *availability* of primary care in these towns. The cautionary notes cited in the report deserve special emphasis in this regard: The presence of primary care hours in a town does not mean that this resource is available at a convenient place or time, nor that it is

fully accessible to the old, poor or socio-culturally estranged populations. A second limitation is the use of patient visit data which uses nationally expressed demand to estimate unexpressed demand or need. A neat method to estimate unexpressed demand has been used, and there is currently no better way to make these estimates. For this reason however, the findings, especially in small towns where the non-respondent data may be less valid, need to be viewed with caution. Finally, the data on distribution of physicians pertain to the calendar year 1974. Until the study which projects needs to 1980, which is now underway, is complete, the data are not completely useful for planning.

Taking these reservations into account, the study findings are very useful and a little surprising. It has been known nationally that distribution of physicians of "the right kind in the right place" is a problem perhaps more pressing than a shortage in the absolute number of physicians. This study demonstrates this to be the case with regard to primary physicians in 1974 in the New England state of Connecticut. If primary physicians were distributed according to the needs set by this study, there would be 45 more than required (33 Full-Time Equivalent's in excess). If no redistribution were accomplished there are only 122 more primary physicians required (or 6% of the primary care pool) to meet existing needs (89 FTE's). Thus, under ideal circumstances of distribution, the state has an excess of primary physicians; under current circumstances it lacks only 6% of its pool to meet adequate levels. This finding, irrespective of the study's limitations, should direct us more to a concern with the distribution and availability of primary physicians than to increasing their numbers.

The study findings are also of interest with regard to those factors which affect the hours devoted to primary care by primary physicians. The general/

family physician contributes most hours, the internist least; the rural physician more and the urban physician, devoted more to subspecialties, less. These factors, whether due to physician self-selection of locale or the market place, deserve recognition.

It is certainly time for the practicing physician to play a hand in the forces which are to result from studies of this kind. He should assume initiative, at least in effecting the availability and distribution of physicians. Creating models of care which attract the younger primary physician to those parts of the State in need is one of his major responsibilities. Encouraging availability through the formation of groups which provide more "around the clock" coverage, the development of new professionals which can extend his capacity for care, and outreach programs to meet the unmet needs of the less privileged are all important initiatives to take. Finally, physicians in the State should demonstrate their desire to assume these responsibilities by appearing at the public hearing of this report scheduled in July by the Commission for Hospitals and Health Care. Only through repeated such expressions of willingness to assume initiative will the medical profession regain its leadership in the public decision making process.

James E. C. Walker, M.D.

*Professor of Community Medicine
University of Connecticut School of Medicine*

A Death in the Family: Who Comforts the Child?

Physicians are frequently called upon to advise parents trying to support a child grappling with the death of a loved one. The doctor's professional task is difficult. The bereaved child trying to deny his loss or cope with his feelings of being deserted is heartrending. How much help a relative, friend, or professional care giver can provide depends on the magnitude of a child's distress, one's knowledge of normal bereavement in childhood, and one's capacity to cope with the suffering of so young a human being.

We all wish that tragedies would not occur, particularly during the fragile developmental phases of childhood. Indeed, the intensity of this wish may impede an adult from considering the needs of a distraught child. The presumption is often that "the child is too young to understand."

This attitude is unjustified. It is disrespectful; it implies little consideration for the feelings of a child whose loss is intensely real. The beloved person has disappeared and will never again be available. Simultaneously, family members are preoccupied with grief, so that even the living adults who are caring for a child

are less available than under normal circumstances.

An adult attempting to help a child deal with a tragic loss must be able to accept and respect behavior reflecting a child's manner of dealing with the tragic loss. We cannot prevent a child from being sad. Rather we should help adults caring for the child to understand the child's struggle to deal with the finality of a separation caused by death. The loss of a parent, or other primary care giver, can be particularly devastating for young children usually invest all of their capacity to love on the one or two adults who provide for their daily needs.

One fact is paramount; it is unfair to support a child in a belief that the deceased will return. No matter how much an adult may wish to shelter a child from grim reality, avoiding the issues only postpones a child's inevitable need to grapple with the loss. Falsehood will only weaken his ability to trust adults.

At what age can a child understand the finality of a loss due to death? At an earlier age than many people realize. Children of three or often younger understand that a dead goldfish no longer swims and a lifeless bird on the ground can no longer sing or fly. Indeed, pediatricians and nursery school teachers often urge parents to utilize these common crises to help children to begin to understand the meaning of life and death. Explanation of death in terms of "cessation of life" or "no longer living" or "resting forever" is an appropriate way to help a child comprehend the meaning of death. Suggesting that the deceased "went to sleep" creates unnecessary night time fears of what might happen to a child when he goes to sleep.

There is, of course an enormous difference in dealing with the reactions of a child who loses a pet and one who loses a parent or other beloved individual. Children may at first need to deny the permanence of the loss, saying as Anna Freud¹ reports in *War and Children* "My daddy is dead. He's killed in the war," only to add a few minutes later . . . "we have to wait until after the war. Then God can put him back together again."

A bereaved child needs to be cared for by a consistent adult; he needs his own bed, toys and play areas. He will be comforted by adults who offer an open and honest relationship, rather than by those who choose to "comfort" by hiding the truth. Adults can be very helpful by sharing with a child their own reasons for sadness. One may say, for example . . . "It is very sad and lonely without grandma here. I too wish very much that she could come back and be with us . . . But that isn't possible. We will have to remember her and think of all the things we loved about her when she was alive."

Helping a child grapple with a tragic loss is exhausting. It brings into consciousness one's own childhood when such a loss took place, or memories of being

terrified about the possibility of such a tragedy occurring.^{2,3}

A child of five or older may wish to attend a funeral; he senses that he will find support amidst family and friends as they gather together for the service. He should be allowed to attend if he so desires, but every effort must be made to arrange for him to be accompanied by an adult whom he knows and loves who can comfort him or take him out of the room if he finds the experience overwhelming.

Bereaved individuals, adults and children, need to know that their physicians do care about them . . . The suggestion that a doctor's role is "to cure sometimes, to relieve often, to comfort always" is as true now as when stated by Dr. Edward Trudeau, more than fifty years ago.

Morris A. Wessel, M.D.

Associate Clinical Professor of Pediatrics,
Yale University School of Medicine

REFERENCES

1. Freud Anna and Bulingham, Dorothy: *War and Children*. Int Universities Press, N.Y. 1943
2. Furman Erna: *A Child's Parent Dies*—Studies in Childhood Bereavement, Yale University Press, New Haven, CT. 1974
3. Wessel Morris A: *A Death in the Family—The Impact on Children*. Journal of American Medical Association 234: 865-66 (Nov 24th) 1975

SPECIAL NOTICES

SEMINAR ON OCCUPATIONAL CARCINOGENS

September 22, 1976

Title — Seminar on Occupational Carcinogens

Date — September 22, 1976

Time — 9:00 a.m. to 5:00 p.m.

Place — Harkness Memorial Auditorium
Yale University School of Medicine
333 Cedar Street
New Haven, CT

Sponsors — Occupational Medical Association
of Connecticut
Department of Epidemiology and
Public Health—Yale University
School of Medicine
American Cancer Society—
Connecticut Division
Yale Comprehensive Cancer Center

For further information contact:

Edward J. Bernacki, M.D., M.P.H.
59 Field Street
Torrington, CT 06790

Editor's Report to the House of Delegates

Periodic reports to the House of Delegates about the Journal by the Editor have a different flavor from editorials in the Journal. They should keep the House informed of the state of the Journal and give the delegates an opportunity to question the Editor face to face regarding the report. In the final analysis, the House sets policy on all issues affecting the Society, including the Journal.

If there is one issue that I have tried to emphasize, it is the necessity for the Journal to keep up with the rapid changes taking place not only in medical science but in those forces outside the profession affecting the delivery of health care. Though the average practicing physician realizes the generality of these changes, the details are so numerous that many are totally unaware of them, until they impinge directly on their practice. "Future shock," indeed, is a characteristic of modern medicine, not only as a biological science, but especially in its social implications.

One of the greatest dangers for us physicians, especially for a state journal such as ours, is that our vision of the total health scene at the end of the tunnel is becoming smaller and smaller. This is why communication within the profession must be broad and continuously adapt itself to the changes and events taking place around us. It is also why our priorities, even as reflected in our budget, should rate communication *within* the profession near the highest, and, to your Editor, it is much more important than public relations vis-à-vis the general public. I sadly conclude, as much as we all subscribe to the tradition of a free press, that, outside of the scientific aspect, we in medicine cannot get our message through the various media to the public. No better example of the devastating effect of the partial truth can be found than in the recent five-part series published in the *New York Times*. True, yes, but the whole truth? Definitely not. And the right to "equal time for space" to reply? A myth.

But let us return to *Connecticut Medicine*. No one can point out areas for improvement more than I. Without incurring the expense of a questionnaire to the membership, the Editorial Board feels that we are on the right track. Experience verifies our format of three sections in the Journal: (1). scientific, (2). "extra-scientific," broader in scope than socio-economic, and (3). issues related to the Connecticut State Medical Society and to health affairs in our state.

(1) SCIENTIFIC: The Editorial Board has unanimously agreed that we should make continuing medical education a high priority. This means a difference in style and presentation of some articles. Whereas it is understandable that authors prefer to publish in national specialty journals, the same subject can and

should be written for our general readership, in the style that educators use when they speak before a community hospital staff, made up of all specialties, as part of its program on continuing medical education. Interspecialty communication is decreasing all the time; it should be improved. A specialist in one field now hardly knows what is going on in other specialties.

A brief comment on a problem the Journal may meet even more in the future: Speakers and educators now receive honoraria when they speak before hospital staffs and medical organizations, as they should. But, by tradition and the ability to pay, the Journal cannot. The excellent medical-commercial journals pay authors even more, and additionally and importantly have full-time professional writers to copy-edit and even rewrite articles, minimizing the hard work of writing by contributors. What will happen in the future, I don't know, but it is my hope that potential contributors in our state will continue the sense of duty and responsibility to publish in the Journal as part of our Continuing Medical Education. So far, I have not had difficulty, but I must do a lot of arm-twisting to get our final product to the members.

Actually, there is a surfeit of material in the state for good scientific articles that is untapped. The greatest source is, of course, the two medical schools. It is my hope that delegates will get into the habit of thinking of the Journal and assist me and the Editorial Board in spreading the gospel, to suggest in hospital, state and county meetings, and in conferences, especially those sponsored by voluntary health agencies, that participants submit their talks as manuscripts to the Journal. Such speakers are usually experienced, knowledgeable, and frequently direct their talks to a general audience such as the readership of the Journal rather than to peers in their own specialty.

(2) EXTRA-SCIENTIFIC: I already have referred to the Journal's special section that is devoted not only to socio-economic issues, but to legal, governmental, social, and hospital affairs and malpractice. Because the ethical component in medicine is so important, we are including ethical issues on a regular basis, assisted by Stuart F. Spicker, Ph.D., Associate Professor of Philosophy at UConn Medical School, who has agreed to assist on a consulting basis. Also, in keeping with the premise that a physician is an educated person, we are including a section devoted to articles on the history of medicine, stimulated by Dr. Sherwin B. Nuland, member of the Editorial Board, who additionally has agreed to help in processing scientific articles.

(3) CONNECTICUT ISSUES: It is our writing on medical issues at county and state level, on hospitals and the delivery of care in our state, that I hope to

improve and expand. Connecticut is a small, compact and relatively homogeneous state. I premise that physicians are interested in what is going on throughout the state. I shall try to keep them informed about PSROs in the state, on CRMP, on the new and important HSA programs, on actions and task forces of the Commission on Hospitals and Health Care, on articles concerning malpractice particularly relevant to our state, and such general subjects. However, this requires the hard work of writing, especially abstracting and summarizing, such as is done by newspaper scientific reporters of whom there are three in the state. Scientifically, we have devoted an issue on scientific articles submitted by the Stamford Hospital staff. We also have an issue scheduled for May by the Manchester Memorial Hospital medical staff.

In addition to these three major areas of effort, I have begun a potentially interesting and important experiment with medical students from Yale and UConn. On February 24, four students from each school, Dr. Nuland, and I met to explore how they could participate in and contribute to the Journal. This could be analogous to the role of law students who publish and manage their university law journals, which are excellent and are influential in legal literature. The meeting was stimulating and worthwhile. We shall meet again soon after we have individually explored our areas of responsibility. Already this liaison has paid off in that one of the students, Harvey Berger, a senior at Yale, has solicited, under the supervision of Dr. Lawrence Cohen, Professor of Cardiology, articles from Yale for an issue on cardiology to be published in late summer or early fall.

To end with a few random notes: For the first time, the Council has nominated two women physicians to the Editorial Board: Dr. Florence Keller, obstetrician and gynecologist from Woodbridge, New Haven County, and Dr. Edith Beck, internal medicine, from Greenwich, Fairfield County. It was the Editorial Board that suggested women physicians; the Council gladly complied.

Beginning with our January 1976 issue, we designed a new front cover eliminating the one-half page advertisement (at no loss of income) and enabling us to print the entire table of contents on the cover. Reaction seems favorable.

The Journal obviously is a team effort. Any improvement or success stems from efforts and cooperation of our Journal Staff. The Editorial Board increasingly is participating, and the number and quality of manuscripts, especially from physicians in the state, are improving.

Fred Fabro, M.D.

Report submitted by the Editor at the Annual Meeting, House of Delegates, April 28, 1976

Letters To The Editor

Letters to the Editor are welcomed and will be published, if found suitable, as space permits. Like other material submitted for publication, they must be typewritten double spaced (including references), must not exceed 1½ pages in length and will be subject to editing and possible abridgment.

LITIGATION IN THE U.S.

To the Editor: It is legal for newstands to open display porno magazines with cover girls masturbating in full color.

It is legal for a newspaper to front-page a doctor's picture and to announce that an allegation (no matter how false or unfounded) is haling him to court with a 7 figure claim against him listing also his family assets that have been attached. Small wonder that he gets hit with three malpractice suits immediately afterward and must endure the elaborate consequences.

It is reported that a litigant must be paid 37 million by Piper Aircraft because the owner resisted having the business his father founded taken away from him. The judge felt that some of the ways in which the owner resisted didn't quite fit recent bureaucratic rulings about stock market transactions.

It is not only legal, but it is a "citizens constitutional right" to be dissatisfied with a doctor who has attended him through the pain and anguish of a difficult illness, and then be able to make the doctor spend weeks in court proving fanciful allegations to be baseless.

A black girl miscarried and lost her baby. The compassionate obstetrician tried to comfort her. She misconstrued his tone or words, and assumed he felt that black babies don't count so much. Her anger flared, she sued, and won a sizable award.

A widow suffered from loneliness with escalating anguish after her husband's long illness, which had involved an esophageal rupture. So the X-rays were subjected to retrospective review, and it was then claimed that a certain very faint gray shadow could have been interpreted differently. A 5 million dollar award was made against the radiologist.

Doctors are regularly threatened with lawsuit if they try to collect a bill. Some doctors have quit practicing, others go without insurance. An officer of the AMA, a surgeon grossing \$60,000 is required to pay \$30,000 if he wants malpractice insurance.

Lawyers say that "this is a free society," and that it permits a citizen to drag another into court to try to confiscate his property on any manufactured pretext, even an odorous half-truth.

It is not surprising that the legal profession has been able to establish the game of malpractice litigation which maintains a simple host-parasite relationship. Doctors pay out a sizeable percentage of their income so that plaintiffs' attorneys and defending attorneys can both make good money.

Obviously there is a large gap between what is legal and what is decent, moral, fair and right. The Warren court has glorified the underdog and provides ample opportunities for Robin Hoods. If doctors have become geese for laying golden eggs, if rampant litigation has become a plague comparable to epidemics in the Middle Ages, doctors should take the matter to the court of public opinion.

The physician-patient relationship is still a satisfying fact to most people. Only 1 in 200,000 medical contacts result in a malpractice lawsuit. The suing of doctors came as a very gradual shift when no-fault automobile insurance diminished the income opportunities of trial lawyers. And there is ample reason to believe the public will want to apply the no-fault principle to medical events as well as to the automobile problems.

The laws of torts started long ago when the industrial revolution began. Cities became crowded and conspicuous consumption in the

form of fast horses caused danger to people's lives because of collisions. Some of the rich and proud had to be taught to be more considerate of their fellow citizens. So torts became a method for accomplishing restitution without violence by means of court action. This ultimately developed the whole liability insurance business.

Insurance companies became successful and opulent and apparently their reserve funds waxed quite large. Cunning lawyers quietly got large settlements out of those funds by threat of lawsuit. And then the word got around. So the bubble has now burst and society's system for spreading the cost of honest, unavoidable, natural "acts-of-God" catastrophes, like earthquakes and tornadoes, is foundering.

More than that is in danger. The capitalistic economy of private ownership happens to be the last refuge on earth for political freedom. If the private ownership of property provides such a glittering temptation to try to confiscate it by resort to litigation then democracy itself may be threatened. The "constitutional right to sue permits an unbridled exercise of greed and avarice to operate and tear apart the fabric of our society. Something should be done to save members of the legal profession from the arrogant illusion in which they now marinate. The "law is perfect" they say, "it is only people who are wicked." It is no easier to convince a lawyer he is not right than a king he does not rule with divine approval.

But with lawsuits being used like hand guns, and defending lawyers urging only gracious submission to the agonizing vagaries of litigation, it is time for change.

Surely the medical profession that knows how to eliminate the Black Death should be able to deal correctly with an epidemic of litigation.

Sidney Vernon, M.D.

Willimantic, CT.

PSROs AS A DEFENSIVE AND OFFENSIVE ARM OF AMERICAN MEDICINE

To the Editor: Even though it is difficult to analyze the reactions of the medical profession in Connecticut to the movement of PSRO organizations from the viewpoint of a past president of the Connecticut State Medical Society and, at the same time, from the viewpoint of Medical Director of Connecticut Area II Psro, Inc., I do not find as much resistance as I expected.

True, there are cries of agony from a few. Granted, there are some things about the law that dismay and irritate the average physician. Still, for the most part, the individual physicians have settled down, with some resignation to be sure, to help make the law work and, thereby, maintain control of medical practice in the hands of the profession. I have no doubt that there are some in Washington who would be thrilled to have the profession fail to do this.

Rather than assume that the PSROs are enemy agents serving the Government, I prefer to look at them as allies serving defensively to maintain physician control and serving offensively as an arm of the medical profession to insure and improve quality and, at the same time, showing that medicine also is interested in cutting unnecessary costs.

In this way, we can hold the reins of quality in a national health insurance program that may, and probably will, evolve in the next few years.

James H. Root, Jr., M.D.

Woodbridge, CT.

Famous Fighters



JOHN L. SULLIVAN
Bare-knuckles heavyweight champion
1882-1892

NEOSPORIN® Ointment (polymyxin B-bacitracin-neomycin) is a famous fighter, too.

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gram contains: Aerosporin® brand Polymyxin B Sulfate 5,000 units; zinc bacitracin 400 units; neomycin sulfate 5 mg (equivalent to 3.5 mg neomycin base); petrolatum qs in tubes of 1 oz and 1/2 oz and 1/32 oz (approx.) packets.

INDICATIONS: Therapeutically (as an adjunct to systemic therapy when indicated) for superficial infections, primary or secondary, due to susceptible organisms, as in infected burns, skin grafts, surgical incisions, otitis externa • primary cutaneous infections (impetigo, ecthyma, sycosis vulgaris, paronychia) • secondarily infected dermatoses (eczema, herpes, and seborrheic dermatitis) • traumatic lesions, inflamed or suppurating as a result of bacterial infection.

PRECAUTIONS: Prophylactically, the ointment may be used to prevent bacterial contamination in surgical wounds, skin grafts, incisions, and other clean lesions. For abrasions, minor cuts and wounds accidentally incurred, its use may prevent the development of infection and permit wound healing. **CONTRAINDICATIONS:** Not for use in the eyes or ear canal if the eardrum is perforated. This product is contraindicated in individuals who have shown hypersensitivity to any of the components.

WARNING: Because of the potential hazard of nephrotoxicity and ototoxicity due to



neomycin, care should be exercised when using this product in treating extensive burns, trophic ulceration and other extensive conditions where absorption of neomycin is possible. In burns where more than 20 percent of the body surface is affected, especially if the patient has impaired renal function or is receiving other aminoglycoside antibiotics concurrently, not more than one application a day is recommended. **PRECAUTIONS:** As with other antibacterial preparations, prolonged use may result in overgrowth of nonsusceptible organisms, including fungi. Appropriate measures should be taken if this occurs. **ADVERSE REACTIONS:** Neomycin is a not uncommon cutaneous sensitizer. Articles in the current literature indicate an increase in the prevalence of persons allergic to neomycin. Ototoxicity and nephrotoxicity have been reported (see Warning section).

Complete literature available on request from Professional Services Dept. PML.



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SOME JOHNNIES CAN WRITE

To the Editor: I have just finished reading the editorial in *Connecticut Medicine* written by Dr. Sherwin Nuland. I rejoice that an individual physician capable of using the full scope of our language has spoken out in a most articulate way about our heritage.

I feel that the publication has reached a new maturity under the direction of Fred Fabro and the present Editorial Board who give the opportunity to savor other expressions such as is in this editorial.

Scientific documentation has given us sterile phraseology. Though clearly necessary, I for one find the contrast with Dr. Nuland's imagery memorable.

Congratulations. I will look forward to more of the same.

Allan A. Brandt, M.D.

Milford Hospital

MEDICAL SERIES: THE CONTRARY VIEWS

To the Editor: Before the record closes on your five-part medical series, [Jan. 26-30], one important point should be made: The A.M.A. is not alone in disputing many of your facts, assumptions and conclusions.

Samples of authoritative, contrary views:

New England Journal of Medicine: "... data used were at times inaccurate, at times manipulated and at times subjected to inappropriate extrapolation." Its calculation of "unnecessary" deaths because of gallbladder removal: one-tenth of The Times'.

U.S. Assistant Secretary for Health, Theodore Cooper, M.D.: "One would easily conclude . . . that doctors and health industries spend most of their time in unnecessary activities, i.e., intricate, complex, self-satisfying, technical exercises for profit alone. It is not necessary for me to challenge the inappropriate calculations and extrapolations in these articles."

Ralph S. Emerson, M.D., head of a recent New York State surgical study: "... the Brooklyn-Long Island Chapter of the American College of Surgeons sponsored a study of the surgical procedures in twelve hospitals . . . The incidence of unjustified surgery in the 833 consecutive cases was less than 1 percent." This varies considerably from The Times' 17 percent figure.

Excerpts from letters to The Times that were not published:

The Commission of Professional and Hospital Activities, a source of data for the series, cites eight "mistakes or problems. . . . Your total should have shown only 300,000 appendectomies and 1,000 deaths." The Times reported 784,000 emergency appendectomies, 3,000 deaths. No mention of these factual errors has been made.

Leighton D. Cluff, M.D., former chairman, Department of Medicine, University of Florida College of Medicine, whose figures were cited: "The incidents of drug reactions in a state referral hospital . . . where persons with complicated or rare medical problems are often cared for may not be representative of the average community hospital. Therefore, it is invalid to use these figures to project nationwide incidents."

Francis D. Moore, M.D., chief-in-surgery, Peter Bent Brigham Hospital, Boston: "... the sample of operations upon which the articles are based is much smaller than the authors indicate; the incidence of unnecessary operations has not been determined at all, merely the number of operations in which opinions differ, and, finally, the mortality in these operations is not provided in the critical incident study and is far less than 12,000 a year."

Few if any authorities have endorsed your statistical projections. And I do not see how The Times can defend the promotional banner—"Should You Trust Your Doctor?"—under which the series appeared.

James H. Sammons, M.D.

Executive Vice President

American Medical Association

Reprinted from Letters to the Editor,

New York Times, May 6, 1976.

Letters to the Editor should be typed double-spaced (including references) with conventional margins. The length of the text is limited to 1½ manuscript pages.

BOOK REVIEWS

Beyond Normality: The predictive value and efficiency of medical diagnoses. By Robert S. Galen and S. Raymond Gambino 237 pp. John Wiley and Sons, N.Y. 1975. \$14.95.

One of the major causes of waste in current medical care is the incorrect use of laboratory tests. This is not due to wilful waste, profiteering or medical ignorance, but to overlooking the diagnostic implications of four variables ably discussed in this book; namely sensitivity, specificity, prevalence and predictive value of a positive test.

The authors, pathologists at Columbia University College of Physicians and Surgeons, describe in detail the calculation of each of these factors and include a series of tables to simplify evaluations for physicians who lack the urge to do arithmetic or who need tabulation of the incidence of various diseases.

The importance of this work is illustrated in the eight chapters discussing specific clinical problems: PKU, pheochromocytoma, neuroblastoma, CEA tests, gonorrhea, myocardial infarction and diabetes. By application of relatively simple calculations physicians can determine cut-off levels for diagnostic assumptions, which tests to order and which to omit. The EKG is also considered as a non-laboratory test; it is comparable to clinical chemical tests in the application of "normals" and in predicting clinical outcomes; additionally the physicians who read them disagree considerably about once tracing in five, and in one of eight tracings they disagree with their own previous interpretation!

The CEA blood test receives its well-merited lumps; it is considered "a poor test for cancer because it has an average specificity of 80% when applied to sick patients who are free of cancer . . .", and has an "average sensitivity for colon carcinoma of only 72%." These are well below the ideal figures of 95% established by the U.S. Public Health Service many years ago.

On the other hand VMA tests for pheochromocytoma demonstrate sensitivities and specificities of 96% or more and can be selected to yield highly reliable diagnostic information.

The discussion of diabetes and glucose tolerance testing is highly disillusioning to those who believe chemical diabetes is easily diagnosed or is necessarily related to the usual complications of clinical diabetes mellitus.

The book is "easy reading" and I recommend it highly to physicians generally. We need this sort of information for those who use the laboratory; most laboratory physicians already have some insight into the problems.

Roy N. Barnett, M.D.

CSMS ANNUAL MEETING



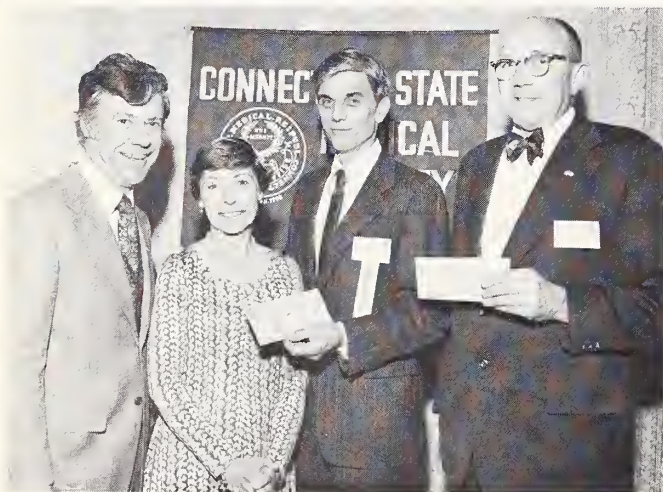
Governor Ella T. Grasso addressed the opening session of the House of Delegates and discussed the new physician disability legislation.



Retiring CSMS President Guy W. Van Syckle, M.D., of Danbury (left) passes the President's gavel to the Society's new leader Dr. Hilliard Spitz of New London.



David A. Grendon, M.D., (left) of Sharon presents the Silver Revere Bowl to Guy W. Van Syckle, M.D., of Danbury, honoring him as the immediate Past President of the Connecticut State Medical Society.



Left to right Dr. Van Syckle and Mrs. Harold Knight, Chairman of the AMA-ERF Committee of the CSMS Auxiliary, presented checks to representatives of Connecticut's two medical schools.

Carl F. Hinz, M.D., Associate Dean for Academic Affairs at the University of Connecticut received a check for \$4,493.48 and Lawrence Pickett, M.D., Associate Dean for Clinical Affairs at Yale University received a check for \$5,561.70.



Dr. Van Syckle, left, presents certificates to four CSMS members in honor of their fifty years of membership in the organization. Receiving the awards, left to right, are: Amos Edgar Friend, M.D., of Manchester; Edward Everett Williams, M.D., Naugatuck; Edward Taylor Wakeman, M.D., of New Haven; and Morris Glazer, M.D., of New Haven. Not present when the photo was taken Stuart Howard Bowman, M.D., of Naples, Florida; Alfred Joseph Finn, M.D., of Waterbury; Edward Earl Fitzpatrick, M.D., of St. Petersburg, Florida; Winthrop Prescott Partridge, M.D., of Fort Lauderdale, Florida, and Charles Russman, M.D., of Hallandale, Florida.

SUMMARY OF PROCEEDINGS

HOUSE OF DELEGATES—ANNUAL MEETING

Hartford, Connecticut—April 28, 1976

Reports and Addresses

The House received reports, addresses and/or remarks from the President, the Secretary, the Treasurer, the Council, Delegates to AMA, the standing Committees, Representatives and Advisors, the President of the Auxiliary to CSMS, the President-Elect of the AMA Auxiliary, the COMPAC Board of Directors and delegates from the medical societies in Maine, New Hampshire, Vermont, Massachusetts and New Jersey. At luncheon, awards were made to members who had completed fifty years of membership in the Society. Invited guest speakers were: Governor Ella T. Grasso, who addressed the House during the morning sessions, and Dr. Tom E. Nesbitt, Speaker of the AMA House of Delegates, who described current activities of the AMA to members and guests of the House following luncheon.

At the Annual Dinner of the Society, held on April 28, the incoming President, Hilliard Spitz, New London, made his inaugural address. The addresses of Dr. Van Syckle and Dr. Spitz are published at the conclusion of this summary.

Election of Officers and Others

With several amendments, the House voted to approve the published report of the Nominating Committee (the Council). Officers elected were:

President: Hilliard Spitz, New London.
President-Elect: Isadore H. Friedberg, Newington.
Vice President: Jerome K. Freedman, New Haven
Secretary: Louis C. Backhus, Waterbury.
Treasurer: Carl W. Johnson, Thompsonville.
Speaker of the House: Timothy F. Nolan,
Greenwich.
Vice Speaker of the House: David A. Grendon,
Sharon.
AMA Delegates:
J. Alfred Fabro, Torrington
E. Tremain Bradley, Norwalk.
Alternate AMA Delegates:
Morris A. Granoff, New Haven
Sidney L. Cramer, Hartford.
Councilor-at-Large: Guy W. Van Syckle, Danbury.

Presentations and Awards

Presentation to Retiring President: In recognition of his high standard of performance as President of the Society during 1975-76, Guy W. Van Syckle, Danbury, received an engraved silver bowl and a past

president's pin. The presentations were made by David A. Grendon, Sharon, Chairman of the Council.

Presentation to Incoming President: An engraved gavel, symbolic of the office of President of the Society, was presented to Hilliard Spitz, New London, by retiring President, Guy W. Van Syckle, Danbury.

AMA-ERF Grants to Medical Schools: Provided by the AMA Education and Research Foundation, unrestricted grants were awarded as follows: To the Yale University School of Medicine—\$5,562. Accepting for Yale was Lawrence K. Pickett, M.D., Associate Dean for Clinical Affairs; to the UConn School of Medicine—\$4,494. Accepting for UConn was Carl F. Hinz, M.D., Associate Dean for Academic Affairs.

Principal Actions Taken

All items of business not calling for specific action by the House were accepted directly for filing. Items calling for action to be taken by the House were heard by Reference Committees and, based on the reports of the Reference Committee, were acted on as follows:

(1) Unified Memberships: By a substantial majority, the House voted to reject a recommendation of the Council (tabled since 11/28/75) that there be unified membership (county-state-AMA) in Connecticut; also, that a proposed Bylaws amendment to implement unified membership *not* be adopted. Further, the House voted to refer to the Council's Subcommittee to Study and Revise the Bylaws the suggestions of several Delegates, re possible alternatives to unified membership *per se*, for study and report to the House of Delegates at a future meeting.

In related actions, the House voted to urge the leadership of the Society and of the component County Associations to develop and implement an informational campaign designed to make the profession aware of the reasons for, and advantages of, joining the AMA; also, to urge that special effort be made by the leadership at county and state levels to encourage medical students, interns and residents to become actively involved in the activities of county, state and national units of organized medicine.

(2) Mandatory Continuing Medical Education: By majority vote, the House tabled until the 1977 annual meeting: (a) The previous (11/28/75) action of the House to approve mandatory continuing medical education as a contingency of membership in

the Society; (b) a proposed Bylaws amendment which would implement the previous action; and (c), a resolution which called for rescinding of the previous action.

The House then voted to adopt a resolution as follows:

WHEREAS: The Connecticut State Medical Society is on record as strongly supporting continuing medical educational activities by each of its members; therefore be it

RESOLVED: That the House of Delegates of CSMS instruct the Society's Committee on Continuing Medical Education to make a survey of the actual current level of CME activity of the members of the Society; and be it further

RESOLVED: That the House of Delegates instruct the Committee on CME to develop a process for the administration of a CME program by the Society, including mechanisms for documentation, exemptions and appeals, and the estimated administrative costs of such CME program; and be it further

RESOLVED: That the House of Delegates instruct the Committee on CME to report its findings and recommendations to the Council for transmittal to the 1977 annual meeting of the House of Delegates.

(3) Resolution Re Audit Of Medicaid Payments To Physicians: Noting that once again (late April) communications media reporting of data released by the Department of Social Services (Welfare) had been limited to "names and numbers"; i.e., the name of a physician, his community of practice and the total amount of Medicaid payments made to him/her in 1975, the House voted to adopt a resolution as follows:

WHEREAS: Recent communications media reporting of information (released by the State Department of Social Services) concerning payments made to physicians for services rendered to Title XIX (Medicaid) beneficiaries failed to take into account such important factors as the demographic nature of the physician's practice, the types and numbers of services rendered, the cost to the physician of rendering the services and the dedi-

cation of the physician who provides needed services to Medicaid beneficiaries for markedly substandard compensation; therefor be it

RESOLVED: That the House of Delegates of the Connecticut State Medical Society instruct the CSMS Liaison Committee with the State Department of Social Services to seek the cooperation of the Commissioner of Social Services in making a review with him of the nature and extent of services rendered to Medicaid beneficiaries by Doctors of Medicine during 1975; and be it further

RESOLVED: That the Liaison Committee be instructed to seek to obtain a commitment from the Commissioner that, in the future, such a review will be carried out prior to the release of such data to the communications media and the results of said prior review will accompany the data released.

(4) In Memoriam—Norman H. Gardner, M.D.: By unanimous vote, the House adopted a resolution memorializing Norman H. Gardner, East Hampton, as follows:

WHEREAS: Dr. Norman H. Gardner, of East Hampton, exemplified the finest traditions of Medicine in his service to his patients and to his community; and

WHEREAS: He devoted many hours of his professional and personal time to the work of organized medicine at the county, state and national levels over a period of more than thirty years; and

WHEREAS: In recognition of the valuable contributions he made to organized medicine in Connecticut, he was accorded high honor by his colleagues, being elected President of the Middlesex County Medical Association and the Connecticut State Medical Society; and

WHEREAS: He served with distinction in the affairs of the American Medical Association as AMA Delegate from 1959 to 1975 and as AMA Vice President in 1972-73; therefore be it

RESOLVED: That the House of Delegates of the Connecticut State Medical Society,

acting for the entire membership, express a deep sense of loss on the occasion of the death of Norman H. Gardner, M.D., of East Hampton, on February 9, 1976; and be it further

RESOLVED: That this resolution be made a part of the minutes of this meeting of the House of Delegates on April 28, 1976 and that a copy thereof be sent to his family.

A copy of the resolution will be transmitted to the AMA House of Delegates.

(5) **Commendation Of Christie E. McLeod, M.D.:** By unanimous vote, the House approved a recommendation of the Council that cognizance be taken of the many years of dedicated and valuable service that have been given to the work of the Society by Dr. McLeod, over a period of nearly two decades, and that the House express thanks and commendation to her for such service. Notice of this action, in suitable document form, will be presented to Dr. McLeod at the 1976 semi-annual meeting of the House of Delegates.

(6) **Miscellaneous Actions:** The House voted to:

- (a) Approve a recommendation of the Speaker that the election of committee members in excess of authorized committee strengths be permissible at this meeting, with the proviso that nominations for 1977-78 will be made by the Council in accordance with prescribed current strengths.
- (b) Accept a progress report, submitted by the Council, on the current status of the work being done by its *Ad Hoc Committee to Study County Medical Association Review Procedures* (House of Delegates action, 11/28/75).
- (c) Approve an increase of the authorized strength of the *Committee on Continuing Medical Education* from 15 to 20 members.
- (d) Approve an increase in the authorized strength of the *Committee on the Medical Aspects of Sports* from 12 to 15 members.
- (d) Approve the formation of a *Section on Emergency Medicine* of the Scientific Assembly.
- (e) Approve the formation of a *Section on Surgery* of the Scientific Assembly.
- (f) Approve an increase in the authorized strength of the *Liaison Committee with the State Department of Social Services* from 12 to 14 members; also, a recommendation of the Committee chairman that an anesthesiologist and a urologist be added to the Committee's membership, it being understood that these additions can be made only if and when the authorized

strength of the Committee permits.

- (g) Approve the recommendation of the Council (part of the Report of the Nominating Committee) that the *Liaison Committee with the Connecticut Bar Association* be discontinued.
- (h) Refer the annual report of the Committee on Third Party Payments back to Committee for further study and clarification of that portion of the report describing the effects of P.L. 75-616 (The Connecticut Health Care Act) on the Commission on Hospitals and Health Care, PSROs, etc., and to transmit such clarification to the membership at the earliest possible time.
- (i) Refer the annual report of the Committee on Professional Liability back to Committee for clarification of the statement having to do with the "feeling of the Committee" as to the role of physicians in seeking to achieve a reduction in professional liability insurance premiums.

ADDRESS OF THE PRESIDENT

Guy W. Van Syckle, Danbury

"It was the best of times, it was the worst of times . . ."

Charles Dickens *A Tale of Two Cities*

That it is the best of times for medicine is easy to document. This era in medicine is almost miraculous in the terms of scientific accomplishments. Revolutionary concepts have emerged at all levels. Along with the technological advances in cellular biology we have been able to close the circle of numerous enzyme systems. Genetic coding and a better understanding of the interactions making up cellular immunity suggest impending breakthroughs in hereditary diseases and malignancies. At the clinical level we have demonstrated that we possess a system capable of delivering high levels of complex medical care in life-threatening illness. The system has become so efficient that we are presently agonizing over the limits of one's duty to sustain life. Our educational institutions are moving out of their enclaves into the community and making efforts to respond to the needs of our nation. Programs are being designed and implemented to develop and train broadgauged physicians capable of providing continuing health care required by a family unit. Long forgotten ethical and humanitarian ideals are being reborn; the need to keep health care human is now recognized by all.

That this is also the worst of times is even easier to document. The current trend towards increasing gov-

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ernment intervention and control of medical services in this country can only increase. The reason is the steadily rising cost of health. An ever greater percentage of the gross national product is being spent for health services and is rapidly approaching the ten percent level. It is estimated that the inflation alone will add four to five million dollars to the cost of present Medicare-Medicaid programs without any expansion of benefits. A single recent news bulletin points up the problem: General Motors announced that it paid more last year for health benefits to the Blue Cross - Blue Shield organizations than it did to United States Steel, its major supplier of material for its cars.

Since we are viewed by the government as the principal generators of health care costs, one can confidently predict that the future will bring nothing but increased governmental regulations with encouragement of prepaid health plans, tougher cost accounting, limits on doctor fees, and review of hospital utilization. HEW administrators state that even this will not be enough and that cost and restraint can only be achieved through some form of national health insurance. Regulation and compulsion are the recurrent bureaucratic themes, which ignore the obvious. The present outstanding state of the art exists primarily because the profession is still essentially free.

It is ironic that a government which is unable to manage its own affairs competently insists on spreading its own brand of inefficiency throughout the nation's institutions. There is still no national health policy and no evidence that one will be forthcoming. We continue to be harassed and burdened by legislation, regulation and directives aimed at providing easily accessible, high quality medical care at reasonable cost, the proponents of which acknowledge in private that the goals are indeed mutually exclusive. We are promised credibility, compromise and cooperation but instead are faced with confusion, contradiction and confrontation.

All PSRO organizations have been conditionally designated in Connecticut and the establishment of the State Professional Standards Review Council is almost completed. In these regards, Connecticut is far ahead of many of the other states in the Union. Despite the infancy of the program, demands have already risen from Washington requiring evaluation of the organization's accomplishments in the areas of cost and utilization. Quality care will be a predictable casualty.

The health systems agencies, representing the new organizations mandated by Public Law 93-641, are in place in Connecticut. These agencies will take over the function of the previously existing local health plan-

ning establishments, regional medical programs, and experimental health agencies. As a result, the complex activities of health planning, resource development, and regulation are now conjoined in a single regional health service agency. Non-believers and cynics could well argue that the drafters of this legislation were motivated by a secret desire to subvert local health planning. It is difficult to see how they believe that the legislated organization could work well since their formation necessarily brings out many community conflicts and suspicions that will take a long time to allay. Furthermore, it is incomprehensible that the private health sector which supplies over eighty percent of the health services of this nation could have been ignored by the Congress.

Although the health service agencies and regional health systems agencies have been granted greater authority, responsibility and potential resource allocation than their predecessors, there is little assurance that they will be able to function any better. Recent slashes in budget requests, ranging from forty-five to seventy percent, can only confirm one's disbelief. Increasing responsibility, while limiting personnel and funds, is a blueprint for disaster in any format. Finally, the lines of authority which extend to Washington and the Secretary of HEW, thus by-passing the state administration, will make problems of coordination and statewide planning difficult, if not impossible.

The malpractice crisis continues unabated and is largely unrecognized by the responsible citizens of the state. Neither short term nor long term solutions are apparent. We have become disillusioned with the recent legislation passed in other states which was accompanied by great fanfare and predictions of success. It is now very doubtful that this same legislation will have any significant impact on this national dilemma. Because of the growing dimension of the whole area of personal injury liability, the public must make a decision in the near future regarding the course which it is to follow. Any real solution will require fundamental changes in the present approach to liability, and probably require foregoing certain constitutional rights and privileges. Physician premiums can no longer provide a credible base for the present climate, which compensates for medical injuries even in the absence of demonstrated negligence. The community must become aware that the problem is affecting the economic stability of industries and professions other than medicine and that the public ultimately bears the cost.

The medical commons continues to be the scene of increasing conflict between physicians and others, i.e., nurses, chiropractors, optometrists, podiatrists, etc., who would encroach on the territorial prerogatives previously reserved for the profession. They seek by

legislative fiat the rights and privileges to practice medicine while avoiding the rigors and expense of medical school, residency and licensure. These desires and goals are being aided and abetted by our legislators. Poised in their standard posture of appeasing their constituents, they are neglecting their responsibility to protect the public in an area where the potential for abuse and quackery is unlimited. Others not wishing to practice medicine would be satisfied to determine our fees, mandate our practice locations, and evaluate our competence.

As medicine becomes increasingly politicized we can expect more and more medical decisions to be made on purely political grounds. It is predictable that the central government will increasingly use its spending power to prescribe medical policies which they could not do if it were not for our dependence on their funds. Use of the leverage of the government dollar to accomplish objectives which have nothing to do with the purposes for which the dollar is given has already occurred in education. There is no reason to believe that the same social goals will not be sought in our profession also.

Review of my year of service suggests too many disappointments and too few successes. The Ambulatory Care Study is still not completed. The Connecticut Medical Institute has been unable to become self-sustaining and presently lies dormant awaiting new funding and direction. Both were victims of the vagaries of federal funding and both suffered because the projects exceeded the ability and resources of the Society. Each project was idealistically conceived and each had merit. In final form and function both were barely recognizable. Future projects requiring our efforts and funds deserve a harder look. Previous bitter experience with its disillusionment must take precedence over our idealism and humanitarian instincts. The FTC suit, the defamatory articles in the *New York Times*, together with the crisis rhetoric carried by our local media, illustrate continuing attacks on the fundamental concepts of organized medicine and our patient credibility. Representations that there is an epidemic of errant and dangerous physicians loose in the State of Connecticut conjure up disturbing images to the public and does the profession a disservice. This continuing assault is further evidence of a firm commitment to the goal of nationalized medicine. It is obvious that these attacks are being directed by individuals and groups who believe that their own concept of medical care cannot be accomplished by reform but only by destruction of the present pluralistic system. They would literally tear down the house and hang all the carpenters.

Our legislative efforts have improved and real progress is apparent. Final evaluation of this year's activi-

ties will require time and more objective reporting. The malpractice reform measurements are more cosmetic than curative but are a step forward. Basic premiums predictably will continue to rise in the years to come until attacks are made at the root causes.

The Physician Care and Discipline Bill has pointed up deficiencies in the area of recognition and management of the disabled physician. Unfortunately the emphasis continues to be on policing and punishment rather than on compassion and correction by rehabilitation and retraining. A physician disabled by age, drugs, alcohol, physical or mental illness, is guilty of no crime. He is guilty only of being sick. There remains entirely too much discipline and too little caring in the bill.

Some of our problems are due to the dark and melancholic mood of the nation. Some are due to the widespread erosion of trust in many contemporary relationships. Much has been made of this year and the circumstances we celebrate. Can anyone not be moved by the memory of a handful of courageous men who, in a moment of danger, pledged their lives, fortunes and honor to proclaim a nation whose citizen rights were not based on the whim of a king. We will need to use the same exacting combination of intelligence and high principles our forefathers used to presently evaluate our own institutions and ideas to determine how well they equip us for the perplexing future.

Many of my colleagues recalling the same events would have us mobilize the profession, break out the muskets, and take up positions on the nearest hill. For myself, I have always been more impressed by their optimism. Their confidence in their ability to remake a whole political society based on their belief in men's ability to govern themselves is truly inspiring.

In this same spirit of optimism, with a touch of musketry, I would make two suggestions for the future. First we must act as a catalyst in forging a consortium of the private health sector—physicians, the public, hospitals, educational centers, private insurance carriers. We must stress not only the constructive value of organizing collectively but recognize the impending destruction of the present voluntary health system if we do not. Implementation of Public Law 93-641, without input from these groups, will sound the death knell of the voluntary sector. There is no consolation in the hope that this legislation will fail. Not only will governmental regulation and control not disappear, but even a more authoritative program will be instituted. Only by forming this kind of consortium can we prevent the destruction of a system that, despite its faults, has served the nation well.

Secondly we must take our message to the public. Derek Bok, the current President of Harvard, has

warned: "An institution that cannot articulate its purposes is forever vulnerable to the outside world on which it ultimately relies for its existence."

For too long have we tolerated the lies that our enemies tell. For too long have we apologized for things we have not done to those who are guilty of crimes and transgressions far worse than what is contained in their accusations. The policy we have pursued is not only wrong, it is foolish and self-defeating. It not only betrays what we stand for but it helps insure that what we stand for will soon be lost.

We must understand that there are people "out there" who find it convenient and rewarding to believe the worst about medicine because it is in their best interest, financially or professionally. Others have adverse intentions because of social or political beliefs. Others are simply jealous of our community status. Even those knowledgeable members of the public who understand the complexities of medical care and the contribution we make to health care cannot defend us without help.

What has to be done is to set the record straight. We should prepare a public rebuttal that is so well detailed and phrased as to challenge not only the newscaster's or reporter's skill and knowledge but also his integrity. Even journalists are vulnerable to the truth. What I am urging is that medicine should defend itself against these charges and act with the same indignation and wrathful righteousness one could expect from any innocent victim of the same kind of slander.

Very few people conceive public relations in this way or are capable of this kind of response. The traditional strategy is to ignore the charges or to assume a posture so as not to give offense. Unfortunately, when in an adversary situation with the public acting as jury, such a passive response suggests that there must indeed be some truth to the charges. Whether in court or community, the best defense is to undermine the credibility of the prosecution and its witnesses. I would urge us to change our image and become accessible to the press and public—becoming more verbal and more visible.

In closing, I would like to express my thanks for the privilege of serving as your President for the past year. As predicted in my Inaugural Address, your President has benefited more than the Society. This position can never be a one-man show and much is owed by me to many people; to the Staff for their unswerving support, constructive criticism, and sound perspective; to the numerous colleagues whose wise counsel prevented me from making even more mistakes than I did; finally, to my family for their patient acceptance and understanding of my required absences from the home. And for those who were dis-

satisfied with my performance, I can only offer in partial excuse the following quotation from an authoritative source:

"It is now claimed that men who work much with the x-rays became irascible and irritable . . . some very ugly reports are being made as to mental disturbances."

American Journal of Surgery, 1904

It is always difficult for one to properly express his deep felt appreciation for the honor that you have bestowed on me as your President. Thinking back over the year, my feelings perhaps could be best expressed by repeating an incident which occurred some time ago. A meeting devoted to the discussion of medical problems had been called to which I was invited as the "token physician." After some three hours of being constantly harassed and badgered by various members of the group regarding the deficiencies of the profession, I suggested that what the group had been discussing was primarily nonsense and based on half truths and myths. Understandably the Chairman lost his temper and challenged me with the remark: "Damn it, Van Syckle, don't you understand? You just can't see the forest for the trees." Later, as I was driving home that night—and lonely night driving is something presidents learn to do well—I could only think that what he said was probably true. Yet I could not help remembering how rewarding the last year has been, being here among the trees!

Thank you.

INAUGURAL ADDRESS OF THE INCOMING PRESIDENT

Hilliard Spitz, New London

In this year of 1976, our national bicentennial year, even though it is not quite the bicentennial of our Connecticut State Medical Society, whose by-laws were first adopted on October 9, 1792, it seemed to me a reasonable idea to review with you the purposes of our Society and possibly, in doing this, find guidance for our future activities.

I would therefore like to read Article II Section 1 of the by-laws concerning "Purposes of The Society," which article has never been changed in the 184 years of our existence. "The purposes of the Society shall be to federate and bring into one organization the medical profession of the State of Connecticut; to unite with similar societies in other states to form the American Medical Association; to extend medical knowledge and advance medical science; to elevate the standards of medical education; to promote friendly



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intercourse among physicians; and to enlighten and direct public opinion so that the profession shall become increasingly useful to the public in the prevention and care of disease and in prolonging and adding comfort to life."

The statewide planning committee did offer a critique on this matter in 1973 and some of what I have to say this evening will be taken from that critique.

The first stated purpose is "to bring into one organization the medical profession in the State of Connecticut." I am not sure today that we can say that this is completely the case. I think in all honesty we must say that divisions have developed among the physicians of Connecticut and that all too many do not feel that the Society represents them. There has been a great increase in the number of specialty organizations, which are good and serve a worthwhile purpose in promoting the special interests and aims of individual types of practice. Too many of our physicians, however, feel that their allegiance is entirely with these organizations. In this manner the total medical interest becomes fragmented and lost in individual group aspirations. Also, I think we must say that there is still not agreement between the university-based physicians and the general practicing physician that we have common goals and interests. We will not have succeeded in our purpose until this gap also has been bridged. It would seem, therefore, that our first stated purpose has not been met as yet.

The second stated purpose is "to unite with similar societies in other states to form the American Medical Association." This afternoon, in our deliberations, we were unwilling to back this statement of purpose. We are still not prepared to adopt the concept that the entire medical profession must unite in one organization and speak with one voice, a voice that will represent the majority of all physicians. Until we can adopt this posture, I submit to you that we also fail to meet our second purpose.

"To extend medical knowledge, to advance medical science and to elevate the standards of medical education" follow in our list of purposes. The State Society does continue to provide opportunities for medical education through meetings such as our scientific program will offer tomorrow and through individual lectures and symposia on matters of timely interest through the year. However, I do not think we can quarrel with the concept that when it comes to matters of scientific importance we will all probably gain more from our individual specialty groups which concentrate on the particular issues appealing to a more limited field of interest than we will from more general approaches that try to encompass many different fields. This particular goal, then, probably does not assume the same importance as it did 184 years ago.

However, the final portion of this purpose, "To elevate the standards of medical education" remains as much a concern to us today as it ever has.

The community at large has become increasingly more interested and concerned about the amount of information possessed by the physician. I need not elaborate to this group the tremendous increase in knowledge, the changing medical concepts, the almost impossible task that we all have in keeping abreast of new facts, ideas and trends. And yet this is our individual obligation: to keep ourselves up to date, to provide our patients with the benefits to be derived from medical advances. I am sure that on an individual basis, most of us try to do this. However, again we must recognize that there are some among us who do not. Can we say that consumerism is wrong when it questions us about what I would like to believe are the few who fail to keep up? I don't think we can. We certainly do not want the public or the government to dictate to us how we have to maintain our current knowledge. We have all too many encroachments by government already. However, the situation is there, the momentum is there, the processes for dictating requirements for medical licensure, education and discipline are all in effect and ready to roll. I submit to you that the way for us to maintain control over medical education and to fulfill this stated purpose of the by-laws is to face the situation honestly, to study the situation and come up with meaningful answers as to what are the necessary and proper steps to be taken by the physician today to maintain his or her proficiency. Are there criteria to be met? Should we have requirements to be attested to? I offer no answers to these questions tonight. However, I do suggest that the time has come for critical self-evaluation and I do feel that if we in the medical profession are to maintain control of our own education processes, we must be prepared to assure the public that they will get care commensurate with medical advancement in 1976 no matter to what physician they turn and that, in order to assure them that this situation exists, we will have to police our own system, but what is most important is that it be done as WE think best.

"To promote friendly intercourse among physicians." This goes beyond the matter of purely social gatherings. I would look upon this purpose in conjunction with the first two purposes we have discussed. This would indicate that the purpose of the Society is for its members to be able to discuss and debate freely, openly and with full participation of all, the various matters that come before us. It would imply further that, after such discussion and debate, decisions would be made on the basis of majority opinion and that such decisions would be the basis for policy, and that such policy would be supported

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by all members of the profession as that representing the majority opinion, and, therefore, the stated policy of the Society. Attempts could always be made to change the policy through accepted channels, but, in our dealings with the community-at-large, no efforts would be made to undermine majority opinion. I am fully aware that it is not easy for many of us to accept this position but I do submit again that until there can be spokesmen who speak for the Society in the name of its majority, without fear of contradiction from those who have disagreed, the influence of the medical profession will be attenuated by its divisiveness.

We now come to the last and probably the most significant consideration of all. "To enlighten and direct public opinion so that the profession shall become increasingly useful to the public in the prevention and care of disease and in prolonging and adding comfort to life."

This purpose is a two-fold one. It includes the dissemination of health information so that the public will be more knowledgeable with regard to their own participation in preventing disease and prolonging life, but it does further than this. It states clearly that it is the duty of the Society to direct public opinion as to the means by which all society will benefit most in the pursuit of care of disease and prolongation of life.

Have we been as zealous in providing this type of leadership as we could be? All too often have we not interpreted our role solely with respect to our own individual provision of medical care? We have guarded the quality of medical care zealously. The professional standards and capability of our profession are unexcelled. Most all of us have been most diligent in our own pursuits as to the delivery of health care. This is all to the good. But have we provided leadership? Have we directed public opinion?

Rather, I would say that we have done our own jobs well and have resisted what we have felt are undesirable approaches to medical care, but we have forfeited our rightful role of leadership. This is not meant as an incrimination of our activities. This is a period of "consumerism." It is not only in the field of medicine that the presumed expert, the provider, is suspect. This movement prevails in most of the social and economic activity of the day. However, there is only one area that we must concern ourselves with and that is in the field of provision of medical care. We must face the issue of "consumerism" and deal with it effectively.

We must face it, not in the spirit of antagonism, but rather in the spirit of what we can contribute through our own expertise, to provide answers that will satisfy their needs and our own ability to provide for them. While it is true that we practice medicine for our own enjoyment and gain, our chief concern is still for the

health and well-being of our patients. Our common goals are the same. The consumer is looking to get the most value for his investment. When we function as consumers in other fields we have the same interest. However, when judgments are made primarily on the basis of economics, the final result may well be the antithesis of what we actually desire. This is what seems to be happening today. All too often the primary consideration turns out to be social and economic and at the expense of good medical care. One example of this is the defensive type of medicine we find ourselves practicing so frequently, not because we think it is good or necessary, not because we believe it to be in the patient's interest, but mainly to guard against the possibilities of litigation. This does not help the patient in any way. It only adds on to the cost of medical care. Another situation which might pertain here has to do with the intricacies of third party payments, be they private or governmental, which sometimes seem to favor a more expensive course of action without materially improving the benefits to the patient. We find situations such as the recent series of articles which appeared in the *New York Times*, in which an evaluation based largely on cost factors provided a completely distorted picture of medical practice as it exists today. We find ourselves with P.L. 93-641, the Health Planning and Resources Development Act of 1974, in which the profession is given a minimal role. We find situations in which some of our statesmen and social advocates propose that the requirements for acceptance of applicants by medical schools should be more on a social and economic basis rather than on the basis of seeking those best qualified. These are only a few of the developments of the past year or two. We may not all agree on the pros and cons of all of these issues, but should we not be considering them? Should we not have a policy with respect to them?

There is, as we all know, a very strong movement afoot to deal with the social and economic aspects of medicine. We are at a point that we must decide what our position will be. We can entrust this phase of medical care to the planners. We can seek to maintain the quality of medical care, take the stand that our job is only to provide the care and assure the public of the maintenance of quality. Or we can involve ourselves with the entire situation. We can attempt to regain a position of leadership in the entire matter of delivery of health care. This is by no means a simple undertaking. Time is running out. Maybe it has run out already. However, if we are to make the effort it requires more than a position of reacting. It requires more than merely maintaining good quality of care. It requires more than providing alternatives to proposals of others who would like to direct the course of

medical care. Rather than this, we must be willing to analyze the entire situation anew. We must consider carefully the interests, needs and desires of our patients. We must be able to provide *initiative* in formulating plans which will consider and meet the needs of the consumer, but which will be guided by the maintenance of quality and will remain economically feasible and socially desirable. The task is not an easy one but I believe it is one that needs to be done; one which I do not believe has been accomplished as yet. It fits well into our stated purpose of directing public opinion, if we wish to make that effort. However, I repeat again that this direction of opinion would not be a matter of our attempting to dictate our own private views. Rather, it would entail study and presentation

of ideas which we feel to be in the public interest, to meet the public needs and be commensurate with our own ideas of what constitutes good medical care.

And so, in conclusion, I suggest to you again that if we did have the participation of the entire profession throughout the state; if this situation prevailed in other states, culminating in a strong A.M.A.; if, through this organization, we could address ourselves to the total problem of delivery of health care; and if through frank, open and honest discussion we could arrive at policy that reflected the thinking of the majority of the physicians of the day; then we would be well on our way to meet our final purpose—that of directing public opinion and being useful to the public.

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Detail

PHYSICIAN PLACEMENT SERVICE

The Society maintains the Physician Placement Service as a service to the medical profession in the State of Connecticut. Opportunities for physicians to locate in Connecticut will be published as space permits and will be distributed to physicians making inquiry of such opportunities. Information should be sent to 160 St. Ronan Street, New Haven, Connecticut 06511, (203-865-6822).

Physicians wishing to establish practice in Connecticut are invited to submit a resume to be kept on file with the Society. An announcement of a physician's availability will be published in two consecutive issues of *Connecticut Medicine*.

PHYSICIANS WISHING TO LOCATE IN CONNECTICUT

Family Practice: Available July 1976. Passed National Boards. Desires salaried position. Graduate of Sarah Lawrence College, New York University School of Medicine, Montefiore Hospital Family Practice Program. Connecticut license. Marji Gold, M.D., 3396 Wayne Avenue, Bronx, N.Y. 10467.

Family Practice: Available now. Applying for Connecticut license. Relocating from California. Graduate of Holy Cross, Yale University School of Medicine. 36 years old. Michael D. Gorman, M.D., 83 Old Colony Road, Stamford, CT. 06907. 1-322-4620. Solo, group, associate or institutional practice will be considered.

Family Practice: Interested in southeastern Connecticut. Available July 1976. Board eligible. Presently on active duty with U.S. Navy. Graduate of Columbia. M.D. from Boston University School of Medicine. Harvey R. Cross, M.D., 610 Americana Drive, Annapolis, Maryland 21403.

Anesthesiology: Available immediately. 50 years of age. Connecticut license. Board eligible. Graduate of Downstate Medical Center, New York. John J. Cashman, M.D., Woodline Avenue, Greenwood, N.Y. 10925.

Dermatology/Psychiatry: Connecticut license. Available now. Prefers full time dermatology. Board eligible. 33 years old. William Elstein, M.D., 41 Trenor Drive, New Rochelle, NY 10804.

Emergency Room: Available on short notice. FLEX. Graduate of Cairo University of Medicine. Trained in England and Scotland. F. S. Ibrahim, M.D., 1306 Canary Street, Cordele, GA 31015.

Internal Medicine: Connecticut license pending. Available June 1976. Primary care. Board eligible. 29 years old. Plans to settle near Easton, CT. Desires group practice or industrial or institutional position. Stuart M. Bogner, M.D., 3965 Sedgwick Avenue, Bronx, NY 10463.

Internal Medicine (Endocrinology): Board eligible. Group practice in larger community. 31 years old. Available July 1976. Completing fellowship at Cincinnati General Hospital. Graduate of University of Maryland. Michel Susan Foster, M.D., 730 Riddle Road, #109, Cincinnati, O. 45220.

Internal Medicine: Available July 1976. Family located in Fairfield. Would prefer group or institutional practice within 25 mile radius. Graduate of University of Maine, Medical College of Pennsylvania. Has been in New Haven area (74-76) on fellowship. Write CSMS for resume.

Internal Medicine (Endocrinology): Available July 1976. Wishes to join one or more internists in private practice. Teaching opportunity desired. Completing fellowship at Montefiore Hospital. Daniel P. Hoffman, M.D., 11 Hillview Avenue, Yonkers, NY 10704.

Internal Medicine: Primary care. Available July 1976. Connecticut license. Completing fellowship in nephrology at Yale. Solo or associate type coverage. 30 years old. Board certified. Desires to remain in Connecticut. Contact CSMS.

Internal Medicine (Pulmonary): Board certified. Desires medium sized community. General medicine with subspecialty. Graduate of Fairfield University, M.D. from Georgetown. Available July 1976. William Lavin, M.D., 3001 W. Eastwood Avenue, Chicago, IL. 60625.

Internal Medicine (Nephrology): Group practice preferably in the Hartford-Farmington area. Available July 1976. FLEX. Adarsh Luthra, M.D., 1510-D Clarkson Road, Richmond, VA. 23224.

Internal Medicine (Gastroenterology): Desires group or associate practice. FLEX. Board eligible. Completing fellowship at Nassau County Medical Center, Long Island. Nilesh Rana, M.D., 230 Fairhaven Dr., Jericho, NY. 11753.

Internal Medicine: Available August 1976. Desires Litchfield, Windham or New London area. Completing residency at Hahnemann Medical Hospitals. Leslie Mark Reiner, M.D., Apt. 133A, 801 Cooper Street, Woodbury, NJ. 08096.

Internal Medicine: Available July 1976. Board eligible. Associate or group practice. Completing training at Medical College of Ohio at Toledo. Robert J. Rubano, M.D., 3102 Glencairn Avenue, Toledo, O. 43614.

Internal Medicine (Hematology-Oncology): Completing training at Cook County Hospital, Chicago. Board eligible. Nalin S. Soni, M.D., 1926 W. Harrison, Apt. 1304, Chicago, IL. 60612.

Ophthalmology: Board eligible. Available July 1976. Completing residency at NYU-Bellevue Medical Center. 27 years old. Howard M. Silverstein, M.D., 442 East 20 Street, Apt. 3H, NY, NY. 10009.

Ophthalmology: Board eligible. Completing residency at New York Medical College. Graduate of Cornell and Albert Einstein College of Medicine. Normal Wald, M.D., 80 Midchester Avenue, White Plains, NY.

Internal Medicine: Connecticut license. Available May 1976. Board eligible. Trained at Taipei Medical School. Internship and residency at St. Mary's Hospital in Waterbury, 1972-75. Presently employed in Connecticut. Contact CSMS.

Internal Medicine: Available July 1976. Connecticut license. Completing residency at St. Raphael's. Desires to remain in Connecticut in hospital based program or clinic; primary care group; ER. Board eligible. 30 years old. M.D. from University of Louisville, Kentucky. Resume on file at CSMS.

Emergency Room Physician: Available July 1976. Completing three year program at the Sinai Hospital in Southfield, Michigan. Graduate of the University of Buenos Aires in Argentina. 28 years old. FLEX. Michigan License. Mario A. Roskind, M.D., 22307 LaSeine, Southfield, MI. 48075.

Occupational or Institutional Medicine: Connecticut license. Wishes to return to general medicine. Graduate of N.Y. Medical College, 1964. Board eligible in ophthalmology. Complete resume available at CSMS.

Internal Medicine: Available September 1976. National Boards. Board eligible. Columbia University; University of Michigan, M.D.; Internship and residency at Beth Israel Medical Center, N.Y.C. Prefers southwestern Connecticut in solo, group or associate practice. Charles R. Rethy, M.D., 353 E. 17th Street, N.Y.C., NY 10003.

OB/GYN: Board eligible. FLEX. Solo, group or associate practice, 35 years old. Completed US training at Queens General Hospital in New York and Medical College of Philadelphia. Available July 1976. AE/OB, c/o CSMS.

Orthopaedics: Available November 1976. FLEX. Board eligible. Desires solo practice in medium or small community. Presently in practice. Fellowship training in Boston and Milton, Mass. A. Malik Arain, M.D., 21 Hawthorne Woods, Deptford, NJ 08096.

Pediatrics (Clinical Genetics): Interested in birth defects-genetic counseling clinic. Board eligible. Available January 1977. MD from Jefferson Medical College, Philadelphia. Presently on fellowship at Children's Centre in Winnipeg. 32 years old. Completed military service. John T. Martsof, M.D., 307-671 William Avenue, Winnipeg, Manitoba, Canada R3E0Z2.

Pediatrics: Available July 1976. Board eligible. Passed National Boards. Entire medical training at University of Michigan Medical Center. Desires group or associate practice. Resume on file with CSMS.

Psychiatry: Connecticut license. Presently in practice. Available part-time in the greater Stamford area. Resume on file with CSMS.

Radiology: Board certified in radiology. Board eligible in nuclear medicine. Connecticut license. Trained in Ireland. Available after July 1976. Prefers medium sized community. Solo or group practice. 56 years old. Trained at Lahey Clinic in Boston, 1956-59. Has had experience in general practice in Newfoundland. Henry Dominick Wilson, M.D., Merlin Park Hospital, Calway City, Ireland.

Surgery (General): Available now. Board eligible. FLEX. Special interest in vascular surgery. Trained at St. Peter's Hospital in Albany 1969-72. Boston City Hospital 1972-76 on fellowship. S. Anurshetru, M.D., 173 Pleasant Street, Melrose, MA. 02176.

Surgery (General): Presently on active duty. Board eligible. Available July 1976. 33 years old. M.D. from University of Rochester. Internship and residency at Bellevue-NYU. Group practice in medium sized community. Resume on file with CSMS.

Surgery (General-Vascular): Available July 1976. Licensed in N.Y. and N.J. Board eligible. S. Kumar Dash, M.D., 410 Prospect Street, Apt. 3B, East Orange, NJ 07017.

Surgery (General): Available September 1976. Board eligible. Completing training at Montefiore Hospital 1972-76. M.D. from University of Rochester. Internship at Jacobi Hospital, N.Y.C. Associate type practice desired. Barry N. Haicken, M.D., One David Lane, Yonkers, NY 10701.

Surgery (General and Peripheral Vascular): Available July 1976. Board eligible. FLEX. Trained in Albany, N.Y. and Dayton, Ohio. 41 years old. Graduate of Cairo University, Egypt. S.F. Nicola, M.D., 1208 W. Fairview, Dayton, O. 45406.

Surgery (Thoracic and Cardiovascular): Available July 1976. Board eligible. Prefers larger community. M.D. from Medical College of Wisconsin. Trained at Tufts and Temple Medical Centers. Godfrey C. Pinder, M.D., 220 Locust Street, Philadelphia, PA. 19106.

Urology: Board eligible. Solo, group or associate practice in medium or small community. Available July 1976. M.D. from University of Kentucky 1969. Trained at University of Illinois and McGill University. Complete military service. Edward Salmon, M.D., 4343 Graham Drive, Pierrefonds, Quebec, Canada H9H2B9.

OPPORTUNITIES FOR PRACTICE

(If no name is listed, contact the Physician Placement Service for more details.)

Medical Director of University Health Service: Part time, Internist, Family practitioner. Connecticut license needed. Supervise overall program with adequate staff and administrative assistant. More details available from CSMS or from Personnel Services, University of Hartford, 200 Bloomfield Avenue, West Hartford, Conn. 06117. Beginning on August 15, 1976. Salary range: \$15,000 - \$18,000.

Physical Medicine and Rehabilitation: Northeastern sector of the state can use a physiatrist. Details available from CSMS.

Emergency Room: Contact Chief of E.R., Bridgeport Hospital, Bridgeport, CT. 06602.

Family Practice: Town of East Windsor needs a practitioner urgently. Medical office with practice available. No fee, reasonable rent. Call 203-623-4564 or write Maurice A. Bourquin, President, M.A.B. Machine Corp., Box 338, Broad Brook, CT.

Internal Medicine: State hospital requires physician for medical work up of patients. Support staff of five physicians. Details from CSMS.

Internal Medicine: Part time. Alcohol treatment center. Contact Paul Errera, M.D., V.A. Hospital, West Haven, CT. 06516.

Allergy: Established practice available. Physician wishes to retire fall of 1976. Excellent opportunity for beginning practitioner or one desiring to relocate. Irving Uvitsky, M.D., 3101 Main Street, Bridgeport, CT. 06606.

Family Practice: Associate wanted to join Diplomate of ABFP. Candidate should be Board Certified or Board eligible. Community midway between N.Y.C. and Boston. Serving 45,000 population. Two, open staffed hospitals—350 and 100 beds. One a teaching hospital. Salary during first year, leading to association or partnership. Contact CSMS.

Primary Care Physician: Trained and interested in primary or family practice medicine to join an established group in an university-affiliated community hospital for an ambulatory program with primary and community disease clinics, and an active emergency room with 42,000 annual visits. Position requires no night duty, has a 45-hour work week, offers an attractive salary and liberal employee benefits. Contact: Charles W. Parton, M.D., Director of Ambulatory and Community Medicine, Mount Sinai Hospital, 500 Blue Hills Avenue, Hartford, Connecticut 06112. 203-242-4431.

Family Practice: Needed immediately. Internist-Family Practitioner for large, active practice of a recently deceased physician in Hartford. Fully equipped office. Financial arrangements flexible with opportunity to purchase or rent. Serving urban, middle income residential area. Contact J. Rosenbaum, M.D., 16 Vardon Road, West Hartford, CT. 06117. Telephone: 203-232-4781.

Family Practice: Area in and around Stratford is in need of primary care physician. Local physician willing to assist MD with establishing a practice and with coverage. For details contact CSMS.

Family Practice: Town of Union, and the Stafford Springs area needs primary care coverage. For Details contact CSMS.

OB/GYN: Association with two physicians in the Greater Norwich area. For details contact CSMS.

OBITUARY

Charles S. Culotta, M.D.
1904-1976

Dr. Charles S. Culotta died March 1, 1976, at the age of 72.



He was born in Termini, Sicily on February 16, 1904. He came to this country at two years of age when his family settled in Waterbury, later living in New Haven until 1932 when he moved to Hamden.

He graduated from Yale University in 1925 and from Yale Medical School in 1928. He was an instructor and assistant clinical professor of pediatrics and public health at Yale Medical School from 1931 to 1946, and associate clinical professor at the medical school and nursing school at Yale since 1946. He was attending pediatrician at Yale-New Haven and St. Raphael's Hospitals, and a director of Well Baby Clinics for the New Haven Department of Health.

Dr. Culotta was Chief of Pediatrics at St. Raphael's Hospital from 1969 until his retirement in 1973. He was a consulting pediatrician at the Griffin Hospital for many years.

Dr. Culotta was a member and past president of the New Haven County Medical Association. He was also a member of the Connecticut State Medical Society, the AMA, Sigma X, Delta Omega and Nu Sigma Nu Societies and the Connecticut Hezekiah Beardsley Chapter of the American Academy of Pediatrics.

He was co-author of "Semantic and Endocrine Studies of Puberal and Adolescent Boys," and has made numerous contributions to other medical journals.

He is survived by his widow Mrs. Helen Siek Culotta, a son, Charles S. Culotta, Jr. of Newington and a

daughter, Mrs. Charles (Angela) Daukas of West Hartford.

JOSEPH MIGNONE, M.D.

In Memoriam

Burns, Julianna L., University of Vienna, 1928. Dr. Burns was a family practitioner in the Middlesex area since 1954. She was a member of the Middlesex County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Burns died April 13, 1976, at the age of 76.

Christine, Barbara W., Albany Medical School, 1948. Dr. Christine was former chief of the Epidemiology and Chronic Disease Control sections of the State Department of Health. She worked in private practice in the Torrington area until 1960. From 1964 to 1968 she headed the epidemiology section of the state health department and then served briefly as health director in Greenwich. She returned to the epidemiology section and shortly thereafter became chief of the Chronic Disease Control section, retiring in March 1975. She then served as state investigator for the National Cancer Institute until December 1975. She was a member of the Litchfield County Medical Association and the Connecticut State Medical Society. Dr. Christine died March 31, 1976, at the age of 53.

Hankin, Morris A., Long Island College of Medicine, 1933. Dr. Hankin was an internist in the New Haven area since 1934. He was a member of the New Haven County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Hankin died March 21, 1976, at the age of 71.

MacCready, Paul B., Johns Hopkins Medical School, 1921. Dr. MacCready was a physician in the New Haven area since 1925, specializing in ear, nose and throat surgery, until his retirement in 1966. He was a full attending surgeon at the Yale-New Haven Hospital and at the Hospital of St. Raphael. He was a consultant for the United Hospital in Portchester, N.Y., for the Sharon Hospital in Sharon and for Griffin Hospital in Derby, and the Middlesex Hospital in Middletown. He was a member of the New Haven County Medical Association, The Connecticut State Medical Society and the American Medical Association. Dr. MacCready died April 1, 1976, at the age of 80.

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